TOWN OF DELAFIELD PLAN COMMISSION MEETING
Tuesday, May 7, 2024, 6:30 p.m.
Town of Delafield Town Hall W302 N1254 Maple Avenue, Delafield, WI 53018

Prior to the start of the scheduled Plan Commission meeting there will be two public hearings in front of the Town Board and Plan Commission. The purpose of the first hearing is to consider a request by Sune Ericson, representative of the Ericson Living Trust to rezone the westerly 2.7 acres of land located at W333 S271 Glen Oaks Drive, from A-1 Agricultural District to A-3 Suburban Home District. Tax Key No. is DELT0841-030. The second hearing which will take place immediately following the first hearing is to consider the request from Katrina Hulls, to rezone her property at W288 S250 Elmhurst Road from A-1 Agricultural to A-3 Suburban Home District. Tax Key No. is DELT 0862-997. The regularly scheduled Plan Commission meeting will begin immediately following the conclusion of the public hearing.

AGENDA

1. Call to Order and Pledge of Allegiance

2. Approval of the minutes of March 5, 2024.

3. Communications (for discussion and possible action): None

4. Unfinished Business: None

5. New Business:

   A. Consideration and possible action on a request from Sune Ericson, representative of the Ericson Living Trust to rezone the westerly 2.7 acres of land located at W333S271 Glen Oaks Drive, from A-1 Agricultural District to A-3 Suburban Home District. Tax Key No. is DELT0841.030.

   B. Consideration and possible action on a request from Corey Wachowiak, agent for owners, Eric and Cadice Falkner, N20 W29957 Glen Cove Road to approve a Certified Survey Map to combine two lots of record into one lot at N20 W29957 Glen Cove Road. Tax Key No. DELT0810-078.

   C. Consideration and possible action on a request from Katrina Hulls to rezone the property at W288 S250 Elmhurst Road from A-1 Agricultural District to A-3 Suburban Home District. Tax Key No. is DELT0862-997.

   D. Consideration and possible action on a request from Neumann Development, agent for the Thomas family properties for the following items related to the Welshire Farm subdivision:
      a. Consideration of Lot Allocation
      b. Approval of the Preliminary Plat
      c. Consideration of Specific Development Plan
      d. Consideration of proposed deed covenants and restrictions

6. Discussion: None

7. Announcements and Planning Items: Next meeting: June 4, 2024.

8. Adjournment

PLEASE NOTE:

- ✓ It is possible that action will be taken on any of the items on the agenda and that the agenda may be discussed in any order. It is also possible that members of and possible a quorum of other governmental bodies of the municipality may be in attendance at the above-stated meeting to gather information; no action will be taken by any governmental body at the above-stated meeting other than the governmental body specifically referred to above in this notice.
- ✓ Also, upon reasonable notice, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service, contact Town Clerk Dan Green (262) 646-2398.

TOWN OF DELAFIELD
PLAN COMMISSION MEETING
TUESDAY, MARCH 5, 2024 @ 6:30 P.M.

Video Link: https://www.youtube.com/watch?v=T9rxq-2v9I4

First order of business: Call to Order and Pledge of Allegiance

Chairperson Fitzgerald called the meeting to order at 6:30 p.m. and led all in the Pledge of Allegiance.

Members present: Chairperson Kranick, Supervisor Michels, Commissioner Dickenson, Commissioner Mihalovich, Commissioner Cummings, Commissioner Janusiak, and Plan Commission Chairperson Fitzgerald.

Also present: Engineer Tim Barbeau and Administrator Dan Green.

Second order of business: Approval of the minutes of January 16, 2024.

Motion by Supervisor Michels to approve the minutes from January 16, 2024. *Seconded by Chairman Kranick. Motion passed 7-0.*

Third order of business: Communications (for discussion and possible action): NONE

Fourth order of business: Unfinished Business: NONE

Fifth order of business: New Business:

A. Tom Beaudry, 229 Lynndale Road, LLC, Re: Consideration and possible action on the Site, Grading, Landscape, Lighting, Architectural and Plan of Operation for Lake Country Toy Box vehicle storage facility located at N47 W28229 Lynndale Road.

   Engineer Barbeau explained this application was approved in 2022. There were a number of items that were conditioned on the approval, including if nothing happens in 12 months, the approval expires. Mr. Beaudry wants to continue with the project, so we are taking another look at the proposal. The original approval conditioned there be no solar panels. The State preempts the Town from regulating solar panels. The Town also reviewed the placement of AC units on the site, which the applicant addressed. The stormwater permit was approved along with the maintenance agreement, by Waukesha County. The Town is waiting for declarations, which have not been submitted. They have recorded a shared driveway agreement, and a holding tank agreement was approved by the Town Board.

   Engineer Barbeau explained the applicant has requested there be an option to have AC units outside if requested. The development meets the setbacks, open space, and offsets. The site plan has not changed since the last submittal, but they have tweaked some of the buildings to meet the offsets. The units are still 30'x50'. The grading plan is the same and the water flows to the south with a pond on the outlot. The lighting plan has not changed. The lights meet the lighting requirements in the Town Code. The landscape plan has not changed, nor has the plan of operation. There will be a gate at the lower end of the driveway with a key fob or keypad to get into the facility. Individual condo units can have their own system of security. There can't be any businesses running out of these units. They would have to meet all the fire codes in the Town Code. Overnight sleeping and outside storage are prohibited. Some of these restrictions might be in the declarations. We were told staff will have the declarations tomorrow. Engineer Barbeau showed a unit with an air conditioner outside, with landscaping around it. The engineer gave a recommendation for approval with the update to the site plan dated 11/3/2023, with all other plans having a 6/14/2022 date.

Commissioner Janusiak asked how the lack of declarations affect the approval. Engineer Barbeau stated the Town is not party to the declarations, but they do review them to make sure nothing contradicts the Town Code. He recommended staff be able to review those before they go to the Town Board, instead of having the Plan Commission review them.

Chairman Fitzgerald questioned if these are condo units, opposed to rental units. Mr. Beaudry explained some of the units may be leased out for a year. Commissioner Cummings asked if the owner of the condo controls renting it out. Mr. Beaudry explained he did not want the owners renting them out, but they could be leased for a year, for those units not sold. He stated it would be tough to regulate an owner renting out spots in their own units.

Supervisor Michels asked how many spaces are designed for motor homes. Mr. Beaudry stated there are none, but there is a plan for a 14' garage door. The number of units will be based on sales. The only difference between those units is the motorhome units will have a 4' taller door. He also explained that overnight stays will be regulated in the condo declarations. Commissioner Janusiak questioned how these units would not be self-storage facilities, but allowing leasing options for a year. Chairman Fitzgerald stated the Plan Commission would put a certain percentage of units that would be allowed to be leased.

Mr. Beaudry explained the site will have a private water system. The units are designed as mini splits. Some buyers may want full AC units, and those air conditioners will be hidden with landscaping. Chairman Fitzgerald asked who owns the land where the AC units sit. Mr. Beaudry stated each condo has a certain amount of space, and the rest is common space. It would be the owner's responsibility to maintain their area. Engineer Barbeau explained that the condo plat only shows ownership to the edge of the building, and everywhere else is common space. He stated it has to be clear in the condo declarations, who is responsible for the maintenance of the AC unit land and landscaping.

Engineer Barbeau asked if there were other items the commission would like to see in the condo declarations. Chairman Fitzgerald stated if there are concerns from staff's perspective, they can bring the declarations back to the Plan Commission. He asked them to clarify the AC unit common areas, and the leasing restrictions. Leasing units should be limited to 6 total. Mr. Beaudry stated these will be building by building, until they are full.

Motion by Chairman Kranick to approve the following plans, granting staff review of the condo declaration documents, ensuring no overnight stays, limiting the number of units being leased, and clarification of the maintenance of outside air condition units, subject to the plans being updated to match the layout on the Toy Box Condominium plat:

- *Site Plan and Site Grading Plan prepared by CJ Engineering dated 11/3/2022.*
- *Fire Access Exhibit prepared by CJ Engineering dated 6/14/2022.*
- *Landscape Plan prepared by InSite Landscape Design dated 7/12/2022.*
- *Lighting Plan prepared by InSite Landscape Design dated 7/12/2022.*
- *Architectural Plans prepared by Galbraith Carnahan Architects, LLC dated 7/12/2022.*

Seconded by Commissioner Cummings. Motion passed 7-0.

B. Tom Beaudry, 229 Lynndale Road, LLC, Re: Consideration and possible action on the Toy Box Condominium Plat and Declaration for Lake Country Toy Box vehicle storage facility located at N47 W28229 Lynndale Road.

Engineer Barbeau explained the plat has to be approved by the Plan Commission and Town Board. The plat is similar to the site plan, with a few more dimensions. The plat is tied to the property boundaries and the distance between buildings. The second page gives more details about the units, including the size, number of units, square footage, and limited common element. These will all be defined in the declarations. The last page gives details of the inside of the building. If this was a residential condo, the building plans would be part of the plat. These units are very simple, with an open area for a garage, with a bathroom and office. The engineer recommended approval of the plat dated 2/28/2024, and recommend to the Town Board the same, subject to the declarations being reviewed by staff.

Motion by Chairman Kranick to recommend approval of the Condominium Plat and Declaration for Lake Country Toy Box, subject to staff reviewing the declarations, addressing AC unit common space, percentage of units being leased, and regulations on overnight stays. Seconded by Commissioner Dickenson. Motion passed 7-0.

C. Jacob Roy, W298N2808 Shady Lane, Re: Consideration and possible action on a Certified Survey Map to eliminate an internal lot line (lot combination) to clarify lot line location in anticipation of house improvements. (Approved 11/1/2022)

Engineer Barbeau explained this CSM was already approved in November 2022. The CSM came to the Town for signatures, but was past the 12-month recording period. Waukesha County and the Village of Hartland have approved the lot combination. The combination is to get rid of a property line that runs through the driveway.

Motion by Chairman Kranick to approve the CSM dated January 30, 2024. Seconded by Supervisor Michels. Motion passed 7-0.

Sixth Order of Business Discussion: None

Seventh Order of Business: Announcements and Planning Items: Next meeting: May 7th

Eighth Order of Business: Adjournment

Motion by Chairman Kranick to adjourn the March 5, 2024, Plan Commission meeting at 7:04 p.m. Seconded by Commissioner Janusiak. Motion passed 7-0.

Respectfully submitted,

Dan Green, CMC, WCMC
Administrator-Clerk/Treasurer

Plan Commission Report for May 7, 2024

Ericson Zoning Amendment
Agenda Item No. 5. A.

Applicant:	Sune Ericson, representative of the Ericson Living Trust
Project:	Zoning Amendment
Requested Action:	Recommendation to Town Board to rezone the subject land from A-1 Agricultural to A-3 Suburban Home District
Zoning:	A-1 Agricultural
Location:	W333 S271 Glen Oaks Drive (westerly portion that fronts along Cushing Park Road)

Report

The Ericson property is made up of two parcels that were combined into one tax key number many years ago. The house is located on the parcel that fronts Glen Oaks Drive and is zoned R-1. The second parcel is vacant and fronts on Cushing Park Road and is zoned A-1. The Ericsons plan to contact Waukesha County to get separate tax key numbers for each parcel. Their application to the Town is to amend the zoning designation on the 2.7-acre vacant parcel from A-1 to A-3 to bring the lot into conformance.

Adjacent zoning to the subject property includes A-3 to the north, A-1 to the south, A-1 PUD to the west and R-1 to the east. The Town has previously rezoned lands along the east side of Cushing Park Road to either A-2 or A-3 (depending on the lot size) to bring lots into conformance with the Town zoning code.

Staff Recommendation:

The proposed zoning amendment brings the lot into conformance with the Town zoning code which is positive for the community as a whole. The zoning request is compatible with the surrounding residential zoning. I recommend that the Plan Commission make a positive recommendation to the Town Board to approve the request to amend the zoning on the westerly 2.7-acre vacant property located west of W333 S271 Glen Oaks Drive (currently known as Tax Key No. DELT 0841-030) from A-1 Agricultural to A-3 Suburban Home District.

Tim Barbeau, Town Engineer
April 26, 2024

TOWN OF DELAFIELD
NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that a Public Hearing will be held by the Town of Delafield Town Board and Plan Commission on Tuesday, May 7, 2024, starting at 6:30 p.m., at the Delafield Town Hall, W302 N1254 Maple Avenue, Delafield, WI 53018. The purpose of the hearing is to consider a request by Sune Ericson, representative of the Ericson Living Trust, owner, to rezone a vacant 2.70-acre western portion of the parcel located at W333S271 Glen Oaks Drive, from A-1 Agricultural District to A-3 Suburban Home District. Tax Key No. is DELT0841.030.

For information regarding the public hearing, please contact Tim Barbeau, Town Engineer at (262) 317-3307 or Dan Green, Town Administrator at (262) 646-2398.

All interested parties will be heard.

TOWN OF DELAFIELD
Edward Kranick, Chairman
W302 N1254 Maple Avenue
Delafield, WI 53018

Waukesha Freeman. Please run this notice in a column on April 23, 2024 and April 30, 2024.

TOWN OF DELAFIELD

APPLICATION FOR PLAN COMMISSION AGENDA

Plan Commission meetings are typically held the first Tuesday of every month. All applications must be submitted at least 3 weeks before a Plan Commission meeting to make the agenda. Any late submittals will be considered at the following meeting.

(PLEASE PRINT)

Owner Information	Applicant
Name: Ericson Living Trust	Name: Sune Ericson
Address: W333S271 Glen Oaks Drive	Address: W333S271 Glen Oaks Drive
City: Delafield State: WI Zip: 53018	City: Delafield State: WI Zip: 53018
Telephone Number	Telephone Number: 262-408 0801
Email:	Email: sericson@wi.rr.com

APPLICATION TYPE AND FEE (CHECK ALL THAT APPLY)

*Application fees are non-refundable. Fees cover costs associated with public notification, postage, copies, and document recording, however, applicants agree to pay all additional expenses that the Town may incur by virtue of contracted plan review services including but not limited to: legal, surveying and engineering costs.

☐ Site Plan	$150.00	☐ Home Occupation	$50.00
☐ Site Grading Plan	$50.00	☑ Zoning Amendment	$300.00
☐ Lighting Plan	$50.00	☐ Land Use Amendment	$300.00
☐ Signage Plan	$75.00	☐ Conditional Use	$225.00
☐ Preliminary Plat	$300.00	☐ Plan of Operation	$150.00
☐ Final Plat	$150.00	☐ Planned unit Development	$225.00
☐ Certified Survey Map	$250.00	☐ Conceptual Plan Review	$50.00
☐ Developer's Agreement	$100.00	☐ Other	$50.00 minimum

PROJECT NAME: Rezone part of property from Agricultural A-1 to Residential A-3

Property Address: W333S271 Glen Oaks Drive, Delafield, WI 53018

Tax ID/Parcel ID: DELT 0841 030 Lot Size: Rezoning lot is 2.70 acres, total Property is 4.48 acres

Current Zoning: A-3 + A-1 Proposed Zoning (if applicable) A-3 + A-3

Present Use: Residential A-3 + vacant lot A-1 Intended Use (if applicable): Residential A-3 + vacant lot A-3

A complete application along with the appropriate fees shall be submitted by the deadline outlined at the top of the application. In order for an application to be considered complete, the application shall include the required number of site plans/maps, and all of the necessary supporting information as indicated on the project review checklist. If applying for a conditional use or development agreement, a document showing vested interest in the property is required. The Town of Delafield reserves the right not to accept an application that is deemed incomplete.

TOWN OF DELAFIELD PLAN COMMISSION APPLICATION

Project Description

Please answer the questions below that pertain to your request. If necessary, please attach a separate sheet.

PETITION FOR REZONING

In the space below, please describe the purpose of the rezoning.

Create a conforming lot

PETITION FOR LAND USE AMENDM

In the space below, please describe the purpose of the Land Use Amendment.

PETITION FOR CONDITIONAL USE

In the space below, please describe the purpose of the Conditional Use.

PETITION FOR CERTIFIED SURVEY MAP / PRELIMINARY PLAT / FINAL PL

In the space below, please describe the intention of the land division.

PETITION FOR SITE PLAN / PLAN OF OPERATION / OTHER APPLICATION

In the space below, please describe the intention for the site plan, plan of operation, or other application.

Required Forms for Submittal

Required Forms Checklist:

- [x] Legal Description (all applications)
- [x] Professional Staff/Fees Chargeback Acknowledgement (all applications)
- [ ] Certification for Division of Land (Certified Survey Map land splits)

Submittal Information:

- [x] One (1) copy of this application (signed & dated)
- [ ] One (1) electronic copy of all supporting materials, i.e., drawings, plans and written documentation (via email to dgreen@townofdelafield.org).
- [ ] Two (2) full size hard copies of all supporting materials, i.e., drawings, plans and written documentation of plans 11"x17" and smaller.
- [ ] Seven (7) copies of supporting materials larger than 11"x17".

I understand that this form shall be on file in the office of the Town Admnistrator by 4:00 p.m. on the 21st day before the meeting on which I desire to be heard or as required in the Land Division or Zoning Ordinance, whicever is longer. Plan Commission meetings are held the first Tuesday of each month. Furthermore, I understand that any engineering or legal review fees associated with this project may be charged to me.

FAILURE TO PROVIDE ALL REQUIRED MATERIALS AND INFORMATION CAN RESULT IN THIS APPLICATION BEING WITHDRAWN FOR CONSIDERATION BY THE PLAN COMMISSION.

Signature of Owner

March 2, 2024
Date

Sune Ericson
Print Name

For Office Use Only

Application Received _____
Date Received _____
PC Meeting Date _____
Public Hearing Date _____

Amount Received _____
Received by _____
Board Meeting Date _____

Publication Date (if required) _____

TOWN OF DELAFIELD

PROFESSIONAL STAFF FEES CHARGEBACK ACKNOWLEDGEMENT

PLEASE BE ADVISED

That pursuant to the Town of Delafield Code of Ordinances, the Town of Delafield Town Board has determined that whenever the services of the Town Attorney, Town Engineer or any of the other Town's professional staff results in a charge to the Town for that professional's time and services, and such service is not a service supplied to the Town as a whole, the Town Clerk shall charge that service and the fees incurred by the Town to the owner of the property. Also be advised that pursuant to the Town of Delafield Code of Ordinances certain other fees, costs and charges are the responsibility of the property owner.

****

I, the undersigned, have been advised that, pursuant to the Town of Delafield Code of Ordinances, if the Town Attorney, Town Engineer or any other Town professional provides services to the Town as a result of my activities, whether at my request or at the request of the Town, I shall be responsible for the fees incurred by the Town. Also, I have been advised that pursuant to the Town of Delafield Code of Ordinances, certain other fees, costs and charges are my responsibility.

Sune Ericson — March 2, 2024

Signature of Owner — Date

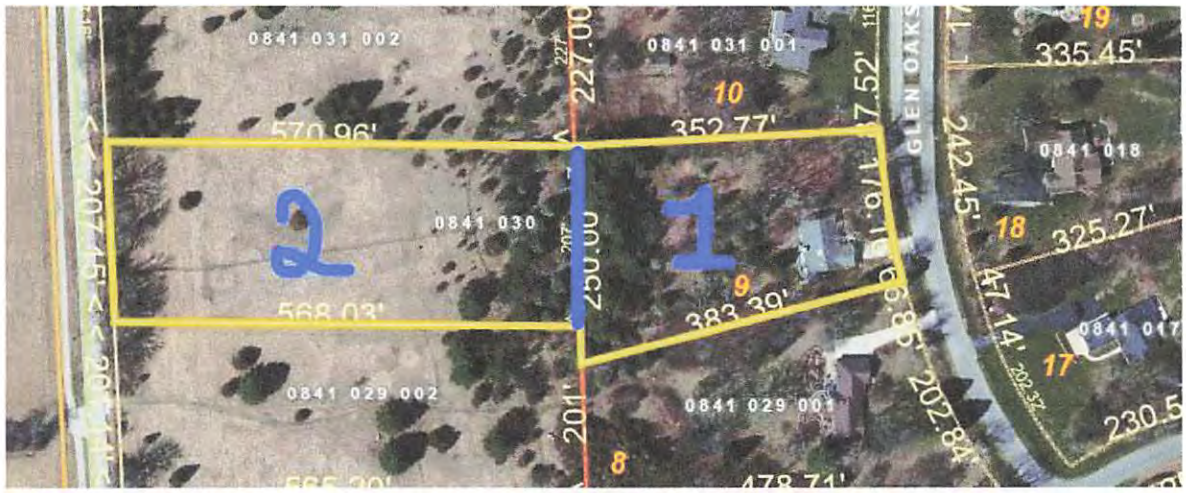
Sune Ericson

Owner's name (please print)

Form received by: _____

Date: _____

kat: H:\Delafield-T\Forms\Professional Fees Chargeback.docx



Legal description for Eastern parcel (#1 in above map):

LOT 9 BLK 2 KELLY-GLEN SUB PT SW1/4 SE1/4 SEC 30 & NE NW SW & SE ¼ NE1/4 SEC 31 T7N R18E

Doc #1460098 Conveys to SUNE ERICSON

Doc #2696229 Conveys to ERICSON LIVING TRUST

Legal Description for Western parcel (#2 in above map):

PT NW1/4 NE1/4 SEC 31 T7N R18E COM N1/4 COR S02°32'E 660.33 FT THE BGN S89°15'E 570.96 FT S01°44E 207 FT N89°15'W 568.03 FT N02°32'W 207.15 FT TO BGN EX WLY 33 FT FOR ROAD

Doc #1530900 conveys to SUNE ERICSON

Doc #2696229 conveys to ERICSON LIVING TRUST

TOWN OF DELAFIELD

Customer Name Ericson
Customer ID Ericson

Receipt Number 6869
Date: 3/1/24
Reference ck#1835

ITEM / INVOICE	DESCRIPTION	QUANTITY	UNIT PRICE	EXTENSION
PLAN	PUBLIC HEARING			300.00

Payment Method: Check

Subtotal 300.00
Sales Tax 0.00
300.00

TOWN OF DELAFIELD

Receipt Number 6869
Date: 3/1/24
Reference ck#1835

ITEM / INVOICE	DESCRIPTION	QUANTITY	UNIT PRICE	EXTENSION
PLAN	PUBLIC HEARING			300.00

Payment Method: Check

Subtotal 300.00
Sales Tax 0.00
300.00

MAP WAUKESHA county

Waukesha County GIS Map

Legend

- Municipal Boundary_2K
- Parcel_Dimension_2K
- Note_Text_2K
- Lots_2K
  - Lot
  - Unit
  - General Common Element
  - Outlot
- SimultaneousConveyance
  - Assessor Plat
  - CSM
  - Condominium
  - Subdivision
- Cartoline_2K
  - EA-Easement_Line
  - PL-DA
  - PL-Extended_Tie_line
  - PL-Meander_Line
  - PL-Note
  - PL-Tie
  - PL-Tie_Line
  - <all other values>
- Railroad_2K

0 145.00 Feet

Notes:

Printed: 4/10/2024

Plan Commission Report for May 7, 2024

Falkner Certified Survey Map
Agenda Item No. 5. B.

Applicant:	Corey Wachowiak agent Eric and Candice Falkner
Project:	Land Combination
Requested Action:	Approval of Certified Survey Map
Zoning:	R-3 (County Zoning)
Location:	N20 W29957 Glen Cove Road

Report

The property owners are requesting approval of a Certified Survey Map (CSM) to combine Lots 5 and 6 of the Resubdivision of Lot 72 Glen Cove Park subdivision into one lot. The common lot line between Lots 5 and 6 extends through the existing house. The lot combination will allow for the construction of a conforming addition to the existing house on the combined lot.

I have reviewed the CSM and have provided two minor technical items that requires correction. Comments have been provided by Waukesha County. All comments and are being addressed by the surveyor at the time of this report.

Staff Recommendation:

The surveyor has addressed all comments from the Town and County; therefore, I recommend approval of the CSM dated April 25, 2024, subject to satisfaction of any outstanding review comments from the City of Delafield (extra-territorial plat review) prior to the Town executing the document.

Tim Barbeau, Town Engineer
April 26, 2024

TOWN OF DELAFIELD

APPLICATION FOR PLAN COMMISSION AGENDA

Plan Commission meetings are typically held the first Tuesday of every month. All applications must be submitted at least 3 weeks before a Plan Commission meeting to make the agenda. Any late submittals will be considered at the following meeting.

(PLEASE PRINT)

Owner Information	Applicant
Name: Eric & Candace Falkner	Name: Corey Wachowiak
Address: N20W29957 Glen Cove rd	Address: 20225 Sutter Creek rd
City: Delafield State: WI Zip: 53072	City: Brookfield State: WI Zip: 53045
Telephone Number: 16084386240	Telephone Number: 414-406-1715
Email: eric_ranger@Hotmail.com	Email: Corey@HS-USA.NET

APPLICATION TYPE AND FEE (CHECK ALL THAT APPLY)

*Application fees are non-refundable. Fees cover costs associated with public notification, postage, copies, and document recording, however, applicants agree to pay all additional expenses that the Town may incur by virtue of contracted plan review services including but not limited to: legal, surveying and engineering costs.

☐ Site Plan	$150.00	☐ Home Occupation	$50.00
☐ Site Grading Plan	$50.00	☐ Zoning Amendment	$300.00
☐ Lighting Plan	$50.00	☐ Land Use Amendment	$300.00
☐ Signage Plan	$75.00	☐ Conditional Use	$225.00
☐ Preliminary Plat	$300.00	☐ Plan of Operation	$150.00
☐ Final Plat	$150.00	☐ Planned unit Development	$225.00
☒ Certified Survey Map	$250.00	☐ Conceptual Plan Review	$50.00
☐ Developer's Agreement	$100.00	☐ Other	$50.00 minimum

PROJECT NAME: Falkner

Property Address: N20W29957

Tax ID/Parcel ID: _____ Lot Size: _____

Current Zoning: _____ Proposed Zoning (if applicable) _____

Present Use: _____ Intended Use (if applicable): _____

A complete application along with the appropriate fees shall be submitted by the deadline outlined at the top of the application. In order for an application to be considered complete, the application shall include the required number of site plans/maps, and all of the necessary supporting information as indicated on the project review checklist. If applying for a conditional use or development agreement, a document showing vested interest in the property is required. The Town of Delafield reserves the right not to accept an application that is deemed incomplete.

TOWN OF DELAFIELD PLAN COMMISSION APPLICATION

Project Description

Please answer the questions below that pertain to your request. If necessary, please attach a separate sheet.

PETITION FOR REZONING

In the space below, please describe the purpose of the rezoning.

PETITION FOR LAND USE AMENDM

In the space below, please describe the purpose of the Land Use Amendment.

PETITION FOR CONDITIONAL USE

In the space below, please describe the purpose of the Conditional Use.

PETITION FOR CERTIFIED SURVEY MAP / PRELIMINARY PLAT / FINAL PL

In the space below, please describe the intention of the land division.

2 Lots combined to 1 current Lot line goes through center of Home!

PETITION FOR SITE PLAN / PLAN OF OPERATION / OTHER APPLICATION

In the space below, please describe the intention for the site plan, plan of operation, or other application.

Required Forms for Submittal

Required Forms Checklist:

- ☐ Legal Description (all applications)
- ☐ Professional Staff/Fees Chargeback Acknowledgement (all applications)
- ☐ Certification for Division of Land (Certified Survey Map land splits)

Submittal Information:

- ☐ One (1) copy of this application (signed & dated)
- ☐ One (1) electronic copy of all supporting materials, i.e., drawings, plans and written documentation (via email to dgreen@townofdelafield.org).
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FAILURE TO PROVIDE ALL REQUIRED MATERIALS AND INFORMATION CAN RESULT IN THIS APPLICATION BEING WITHDRAWN FOR CONSIDERATION BY THE PLAN COMMISSION.

_____ _____

Signature of Owner Date

_____

Print Name

For Office Use Only

Application Received _____ Amount Received _____

Date Received _____ Received by _____

PC Meeting Date _____ Board Meeting Date _____

Public Hearing Date _____

Publication Date (if required) _____

TOWN OF DELAFIELD

PROFESSIONAL STAFF FEES CHARGEBACK ACKNOWLEDGEMENT

PLEASE BE ADVISED

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****

I, the undersigned, have been advised that, pursuant to the Town of Delafield Code of Ordinances, if the Town Attorney, Town Engineer or any other Town professional provides services to the Town as a result of my activities, whether at my request or at the request of the Town, I shall be responsible for the fees incurred by the Town. Also, I have been advised that pursuant to the Town of Delafield Code of Ordinances, certain other fees, costs and charges are my responsibility.

_____ 4-6-24

Signature of Owner Date

_____

Owner's name (please print)

Form received by: _____

Date: _____

kat: H:\Delafield-T\Forms\Professional Fees Chargeback.docx

CERTIFIED SURVEY MAP NO. _____

A COMBINATION OF LOT 5 AND LOT 6 OF THE RE-SUBDIVISION OF LOT 72 "GLEN COVE PARK", BEING A PART OF THE NORTHWEST 1/4 AND SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 23, TOWN 7 NORTH, RANGE 18 EAST, IN THE TOWN OF DELAFIELD, WAUKESHA COUNTY, WISCONSIN.

0 50 75 100 150

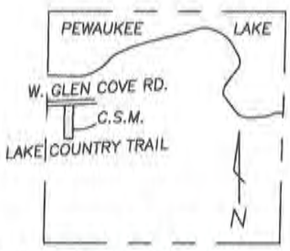
SCALE 1" = 50'

NSE
NORTH SHORE ENGINEERING, INC.
Consulting Engineers & Land Surveyors
11433 N. Port Washington Rd., Mequon, Wisconsin, 53092
(262) 241-9400 • FAX: (262) 241-5337
www.northshoreengineering.net

LEGEND

- O –DENOTES 1.315"X18" STEEL PIPE WEIGHING 1.13 LBS. PER LINEAL FOOT (SET)
- ● –DENOTES STEEL PIPE (FOUND)
- ( ) –DENOTES ALSO RECORDED AS

ALL BEARINGS REFERENCED TO GRID NORTH OF THE WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, WEST LINE OF THE NW. 1/4 OF SECTION 23-7-18 WHICH BEARS S0°04'25"W (NAD83)



LOCATION MAP

NORTHWEST 1/4 SEC. 23-7-18
(SCALE 1"=2000')

SHORELAND NOTE :

1. THE ENTIRE PROPERTY IS LOCATED WITHIN THE WAUKESHA COUNTY SHORELAND PROTECTION ORDINANCE JURISDICTIONAL LIMITS.

MEANDER CORNER FOR THE NW. CORNER OF THE NW. 1/4 OF SECTION 23-7-18 CONC. MONUMENT WITH BRASS CAP (FOUND)

WEST LINE OF THE NW. 1/4 OF SEC. 23-7-18 — S0°04'25"W 1919.40' TOTAL —

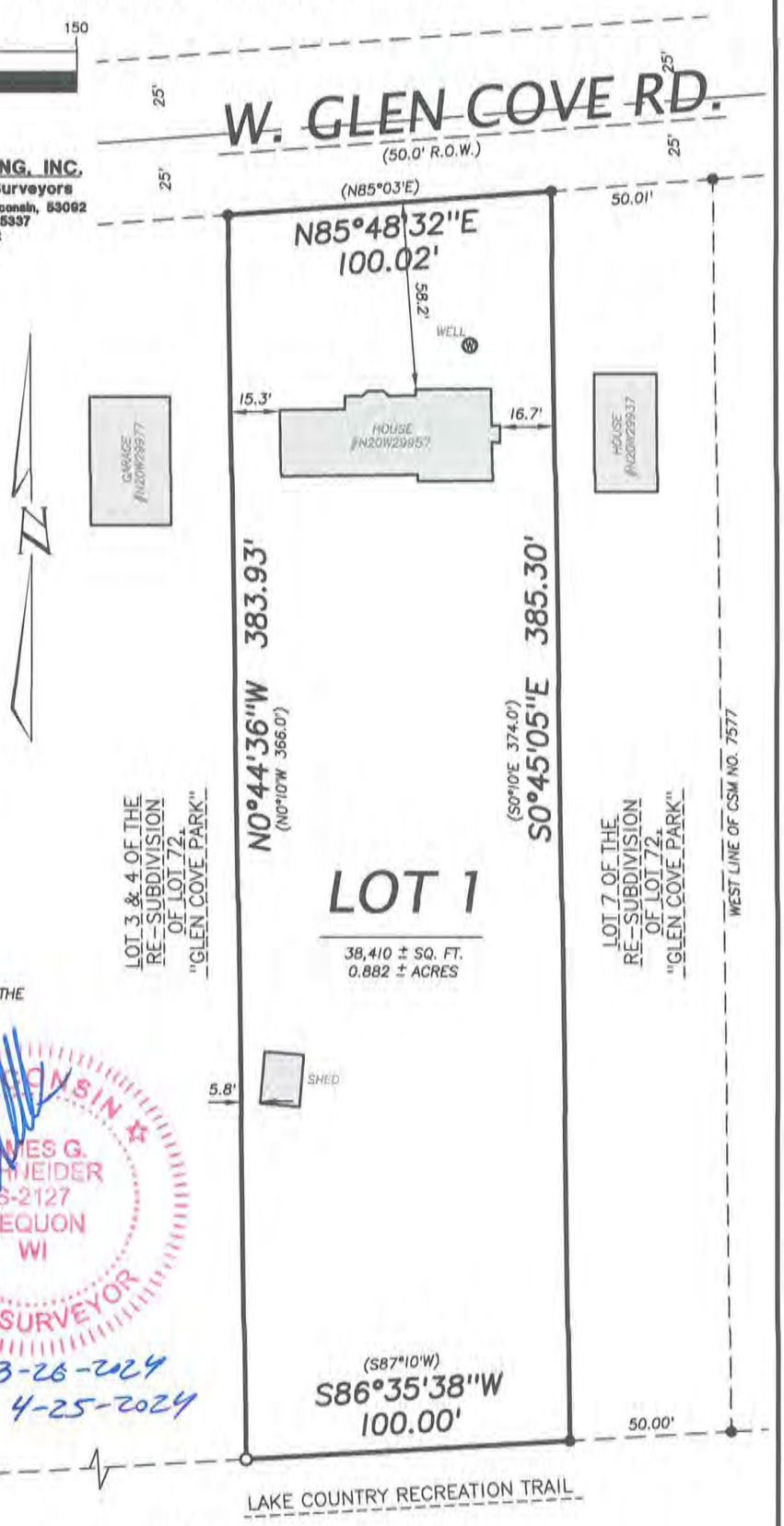
S0°04'25"W 731.00'

N0°04'25"E 1188.40'

SW. CORNER OF THE NW. 1/4 OF SECTION 23-7-18 CONC. MONUMENT WITH BRASS CAP (FOUND)
N.=388567.28
E.=2410962.13

WISCONSIN
JAMES G. SCHNEIDER
S-2127
MEQUON
WI
LAND SURVEYOR

3-26-2024
REV. 4-25-2024



OWNER & SUBDIVIDER:
ERIC & CANDICE FALKNER
N20W29957 GLEN COVE RD.
DELAFIELD, WI. 53072

NOTES :

1. PER STEWART TITLE GUARANTY COMPANY, COMMITMENT NO. 20-1913 THERE ARE NO PLOTTABLE EASEMENTS AFFECTING THE SUBJECT PROPERTY.
2. THIS PROPERTY IS SUBJECT TO AN ACCESS EASEMENT TO THE LAKE AS DESCRIBED BY DOCUMENT NO. 1113180.
3. SEE SHEET 2 FOR BASEMENT RESTRICTION NOTE.
4. THE WAUKESHA COUNTY PARK AND PLANNING COMMISSION GRANTED A WAIVER ON JUNE 17, 2004 REDUCING THE WIDTH OF THE ESTABLISHED ROAD RIGHT-OF-WAY OF GLEN COVE ROAD FROM 66 FT. TO 50 FT.

THIS INSTRUMENT DRAFTED BY JAMES G. SCHNEIDER

CERTIFIED SURVEY MAP NO. _____

A COMBINATION OF LOT 5 AND LOT 6 OF THE RE-SUBDIVISION OF LOT 72 "GLEN COVE PARK", BEING A PART OF THE NORTHWEST 1/4 AND SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 23, TOWN 7 NORTH, RANGE 18 EAST, IN THE TOWN OF DELAFIELD, WAUKESHA COUNTY, WISCONSIN.

SURVEYOR'S CERTIFICATE

I, James G. Schneider, Professional Land Surveyor, do hereby certify:

THAT I have surveyed, divided, and mapped the following parcel of land:

A combination of Lot 5 and Lot 6 of the "Re-subdivision of Lot 72 "Glen Cove Park", being a part of the Northwest 1/4 and Southwest 1/4 of the Northwest 1/4 of Section 23, in Township 7 North, Range 18 East, in the Town of Delafield, Waukesha County, Wisconsin, bounded and described as follows:

Commencing at the Meander corner for the Northwest corner of the Northwest 1/4 of said Section 23; thence S0°04'25"W along the West line of said 1/4 Section, 731.00 feet to a point in the Westerly extension of the South line of the re-subdivision of Lot 72 "Glen Cove Park"; thence N86°35'38"E along said South line, 207.20 feet to the Southwest corner of the aforementioned Lot 5, said point also being the point of beginning of lands to be described; thence N0°44'36"W along the West line of said Lot 5, 383.93 to a point in the South right of way line of Glen Cove Road, said point also being the Northwest corner of said Lot 5; thence N85°48'32"E along said South right of way line and the North line of Lot 5 and Lot 6 of the re-subdivision of Lot 72 "Glen Cove Park", 100.02 feet to the Northeast corner of said Lot 6; thence S0°45'05"E along the East line of said Lot 6, 385.30 feet a point in the South line of the re-subdivision of Lot 72 "Glen Cove Park" and the Southeast corner of said Lot 6; thence S86°35'38"W along the South line of Lot 6 and Lot 5 of the re-subdivision of Lot 72 "Glen Cove Park", 100.00 feet to the point of beginning.

Said lands containing 0.882 acres of land, more or less.

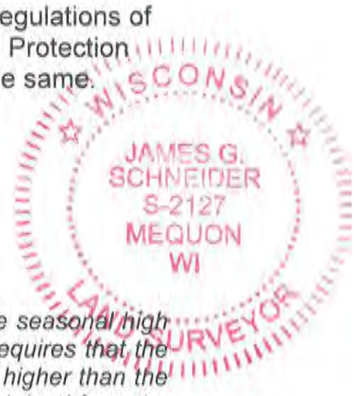
That I have made such survey, land division, and plat at the direction of Eric R. Falkner & Candice L. Falkner, OWNERS of said lands.

That such map is a correct representation of all the exterior boundaries of the land surveyed and the land division thereof made.

That I have complied with Chapter 236.34 of the Wisconsin Statutes, the Regulations of the Town of Delafield Code – Chapter 18.05, Waukesha County Shoreland Protection Ordinance, and the City of Delafield, in surveying, dividing, and mapping the same.

James G. Schneider S-2127

3-26-2024
Rev. 4-25-2024



BASEMENT RESTRICTION-GROUNDWATER:

This Certified Survey Map is located in an area with mapped soils known to have seasonal high groundwater. The Waukesha County Shoreland Protection Ordinance currently requires that the lowest level of any residence must be at an elevation that is at least one (1) foot higher than the highest seasonal groundwater level, unless a valiance from that requirement is obtained from the Waukesha County Board of Adjustments. Therefore, additional soil testing in the vicinity of the proposed addition will be required to ensure compliance with this requirement. If the requirement regarding vertical separation distance from the highest seasonal groundwater level is modified by a future amendment to the Waukesha County Shoreland Protection Ordinance, the requirement at the time of construction shall apply. All groundwater separation requirements set forth by the Town of Delafield must also be complied with.

This instrument was drafted by James G. Schneider

CERTIFIED SURVEY MAP NO. _____

A COMBINATION OF LOT 5 AND LOT 6 OF THE RE-SUBDIVISION OF LOT 72 "GLEN COVE PARK", BEING A PART OF THE NORTHWEST 1/4 AND SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 23, TOWN 7 NORTH, RANGE 18 EAST, IN THE TOWN OF DELAFIELD, WAUKESHA COUNTY, WISCONSIN.

OWNER'S CERTIFICATE

WE, Eric R. Falkner & Candice L. Falkner, OWNERS, do hereby certify: THAT We have caused the lands described in the foregoing certificate of James G. Schneider, Surveyor, to be surveyed, divided, and mapped. We also certify that the plat is required by s236.10 or s236.12 to be submitted to the following for approval or objection: Town of Delafield, City of Delafield, and Waukesha County Department of Parks and Land Use.

_____ _____
Witness Eric R. Falkner

_____ _____
Witness Candice L. Falkner

WITNESS the hand and seal of said OWNERS on this ___ day of _____ 20__.

STATE OF WISCONSIN)
WAUKESHA COUNTY)ss
PERSONALLY came before me on this _____ day of _____,20____ Eric R. Falkner & Candice L. Falkner, to me known to be the persons who executed the foregoing certificate and acknowledged the same.

_____ My Commission expires. _____
Notary Public

CONSENT OF MORTGAGEE

PENNY MAC, existing under and by virtue of the laws of the State of California, mortgagee of the above-described land does hereby consent to the surveying, dividing, and mapping of the land described on this Certified Survey Map and does hereby consent to the above certificate of Eric R. Falkner & Candice L. Falkner, OWNERS.

In witness whereof, said PENNY MAC has caused these presents to be signed by _____ _____, it's _____ at_____ , California, this _____ day of _____, 20___.

IN THE PRESENCE OF:

_____ By: _____

STATE OF CALIFORNIA)
_____COUNTY)ss
PERSONALLY came before me on this _____ day of _____, 20__ the above named by _____, to me known to be the person who executed the foregoing certificate and acknowledged the same.

_____ My Commission expires. _____
Notary Public

This instrument was drafted by James G. Schneider

WISCONSIN JAMES G. SCHNEIDER S-2127 MEQUON WI LAND SURVEYOR

3-26-2024
REV. 4-25-2024

CERTIFIED SURVEY MAP NO. _____

A COMBINATION OF LOT 5 AND LOT 6 OF THE RE-SUBDIVISION OF LOT 72 "GLEN COVE PARK", BEING A PART OF THE NORTHWEST 1/4 AND SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 23, TOWN 7 NORTH, RANGE 18 EAST, IN THE TOWN OF DELAFIELD, WAUKESHA COUNTY, WISCONSIN.

TOWN OF DELAFIELD PLAN COMMISSION APPROVAL

APPROVED by the Town of Delafield Plan Commission on this _____ day of _____, 20___.

_____ _____

Kevin Fitzgerald, Town Chairman Dan Green, Administrator-Clerk/Treasurer

TOWN OF DELAFIELD TOWN BOARD APPROVAL

APPROVED by the Town of Delafield Town Board this _____ day of _____, 20___.

_____ _____

Edward Kranick, Town Chairman Dan Green, Administrator-Clerk/Treasurer

EXTRATERRITORIAL REVIEW AND APPROVAL

CITY OF DELAFIELD PLAN COMMISSION APPROVAL

APPROVED by the City of Delafield Plan Commission on this _____ day of _____, 20___.

_____ _____

Timothy A. Aicher, Chairman Molly Schneider, Clerk

CITY OF DELAFIELD COMMON COUNCIL APPROVAL

APPROVED by the City of Delafield Common Council in accordance with a resolution adopted on this _____ day of _____, 20____.

_____ _____

Timothy A. Aicher, Mayor Molly Schneider, Clerk

WAUKESHA COUNTY DEPARTMENT OF PARKS AND LAND USE

The above, which has been filed for approval as required by Chapter 236 of the Wisconsin State Statutes, is hereby approved on this _____ day of _____, 20_____.

_____

Dale R. Shaver, Director

This instrument was drafted by James G. Schneider

3-26-2024

REV. 4-25-2024

Plan Commission Report for May 7, 2024

Hulls Zoning Amendment
Agenda Item No. 5. C.

Applicant:	Katrina Hulls
Project:	Zoning Amendment
Requested Action:	Recommendation to Town Board to rezone the subject land from A-1 Agricultural to A-3 Suburban Home District
Zoning:	A-1 Agricultural
Location:	W288 S250 Elmhurst Road

Report

The Hulls own a 2.26-acre parcel of land on Elmhurst Drive that is currently zoned A-1. When the Hulls purchased the property, they removed a dilapidated garage that was located very close to the Elmhurst Road right-of-way. They plan to build a new accessory structure on the property. However, locating the structure on the lot has been challenging due to the location of the existing house, location of the septic system east of the house, the presence of a wetland east of the septic area (and the associated 75-foot setback requirement) and the width of the lot (104 feet). The proposed accessory building ends up being located substantially east of Elmhurst Road, requiring a long driveway. The current zoning requires 95% open space which makes the construction of the accessory building and driveway impossible. The amendment of the zoning to A-3 brings the lot size into conformance (A-3 has a 2-acre minimum lot size) and allows for 85% open space.

Adjacent zoning to the subject property includes A-1 to the north, south, and west, and A-2 to the east.

Staff Recommendation:

Based on aerial photos, there has been a house on the property since at least 1963. Therefore, the lot would be considered a lot of record. The house can remain as located even though it does not meet current setback and offset. Any new structures will need to meet current code requirements, hence the need for less open space to accommodate the proposed accessory building and driveway.

Adopting the zoning amendment to A-3 will not change the use of the property (residential). The existing lot is a lot of record and the proposed zoning amendment brings the lot size into conformance with the Town zoning code, which is positive for the community. I recommend that the Plan Commission make a positive recommendation to the Town Board to approve the request to amend the zoning on the property located west of W288 S250 Elmhurst Road from A-1 Agricultural to A-3 Suburban Home District. Tax Key No. DELT 0862-997.

Tim Barbeau, Town Engineer
April 26, 2024

TOWN OF DELAFIELD
NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that a Public Hearing will be held by the Town of Delafield Town Board and Plan Commission on Tuesday, May 7, 2024, immediately following a scheduled public hearing which starts at 6:30 p.m., at the Delafield Town Hall, W302 N1254 Maple Avenue, Delafield, WI 53018. The purpose of the hearing is to consider a request by Katrina Hulls, owner, to rezone property located at W288S250 Elmhurst Road, from A-1 Agricultural District to A-3 Suburban Home District. Tax Key No. is DELT0862.997.

For information regarding the public hearing, please contact Tim Barbeau, Town Engineer at (262) 317-3307 or Dan Green, Town Administrator at (262) 646-2398.

All interested parties will be heard.

TOWN OF DELAFIELD
Edward Kranick, Chairman
W302 N1254 Maple Avenue
Delafield, WI 53018

Waukesha Freeman. Please run this notice in a column on April 23, 2024 and April 30, 2024.

TOWN OF DELAFIELD

APPLICATION FOR PLAN COMMISSION AGENDA

Plan Commission meetings are typically held the first Tuesday of every month. All applications must be submitted at least 3 weeks before a Plan Commission meeting to make the agenda. Any late submittals will be considered at the following meeting.

(PLEASE PRINT)

Owner Information	Applicant
Name: Katrina Hulls	Name: Katrina Hulls
Address W289N3322 Lost Creek Ct	Address W288S250 Elmhurst Rd
City State Zip Pewaukee WI 53072	City State Zip Waukesha WI 53188
Telephone Number 847-487-6000	Telephone Number 847-487-6000
Email: katiehulls@gmail.com	Email: katiehulls@gmail.com

APPLICATION TYPE AND FEE (CHECK ALL THAT APPLY)

*Application fees are non-refundable. Fees cover costs associated with public notification, postage, copies, and document recording, however, applicants agree to pay all additional expenses that the Town may incur by virtue of contracted plan review services including but not limited to: legal, surveying and engineering costs.

☐ Site Plan	$150.00	☐ Home Occupation	$50.00
☐ Site Grading Plan	$50.00	☑ Zoning Amendment	$300.00
☐ Lighting Plan	$50.00	☐ Land Use Amendment	$300.00
☐ Signage Plan	$75.00	☐ Conditional Use	$225.00
☐ Preliminary Plat	$300.00	☐ Plan of Operation	$150.00
☐ Final Plat	$150.00	☐ Planned unit Development	$225.00
☐ Certified Survey Map	$250.00	☐ Conceptual Plan Review	$50.00
☐ Developer's Agreement	$100.00	☐ Other	$50.00 minimum

PROJECT NAME: Elmhurst Road Rezoning

Property Address: W288S250 Elmhurst Rd, Waukesha WI 53188

Tax ID/Parcel ID: DELT0862997 Lot Size: 2.26 ac

Current Zoning: A-1 Proposed Zoning (if applicable) A-3

Present Use: _____ Intended Use (if applicable): _____

A complete application along with the appropriate fees shall be submitted by the deadline outlined at the top of the application. In order for an application to be considered complete, the application shall include the required number of site plans/maps, and all of the necessary supporting information as indicated on the project review checklist. If applying for a conditional use or development agreement, a document showing vested interest in the property is required. The Town of Delafield reserves the right not to accept an application that is deemed incomplete.

TOWN OF DELAFIELD PLAN COMMISSION APPLICATION

Project Description

Please answer the questions below that pertain to your request. If necessary, please attach a separate sheet.

PETITION FOR REZONING

In the space below, please describe the purpose of the rezoning.

We would like to rezone this property to increase the potential building/impervious surface usage that comes with the A-3 zoning. We plan to build a pole barn on the east side of the property.

PETITION FOR LAND USE AMENDM

In the space below, please describe the purpose of the Land Use Amendment.

PETITION FOR CONDITIONAL USE

In the space below, please describe the purpose of the Conditional Use.

PETITION FOR CERTIFIED SURVEY MAP / PRELIMINARY PLAT / FINAL PL

In the space below, please describe the intention of the land division.

PETITION FOR SITE PLAN / PLAN OF OPERATION / OTHER APPLICATION

In the space below, please describe the intention for the site plan, plan of operation, or other application.

Required Forms for Submittal

Required Forms Checklist:

- ☐ Legal Description (all applications)
- ☐ Professional Staff/Fees Chargeback Acknowledgement (all applications)
- ☐ Certification for Division of Land (Certified Survey Map land splits)

Submittal Information:

- ☐ One (1) copy of this application (signed & dated)
- ☐ One (1) electronic copy of all supporting materials, i.e., drawings, plans and written documentation (via email to dgreen@townofdelafield.org).
- ☐ Two (2) full size hard copies of all supporting materials, i.e., drawings, plans and written documentation of plans 11"x17" and smaller.
- ☐ Seven (7) copies of supporting materials larger than 11"x17".

I understand that this form shall be on file in the office of the Town Admnistrator by 4:00 p.m. on the 21st day before the meeting on which I desire to be heard or as required in the Land Division or Zoning Ordinance, whicever is longer. Plan Commission meetings are held the first Tuesday of each month. Furthermore, I understand that any engineering or legal review fees associated with this project may be charged to me.

FAILURE TO PROVIDE ALL REQUIRED MATERIALS AND INFORMATION CAN RESULT IN THIS APPLICATION BEING WITHDRAWN FOR CONSIDERATION BY THE PLAN COMMISSION.

Signature of Owner

4-16-24
Date

Katrina Hulls
Print Name

For Office Use Only

Application Received _____
Date Received _____
PC Meeting Date _____
Public Hearing Date _____

Amount Received _____
Received by _____
Board Meeting Date _____

Publication Date (if required) _____

TOWN OF DELAFIELD

PROFESSIONAL STAFF FEES CHARGEBACK ACKNOWLEDGEMENT

PLEASE BE ADVISED

That pursuant to the Town of Delafield Code of Ordinances, the Town of Delafield Town Board has determined that whenever the services of the Town Attorney, Town Engineer or any of the other Town's professional staff results in a charge to the Town for that professional's time and services, and such service is not a service supplied to the Town as a whole, the Town Clerk shall charge that service and the fees incurred by the Town to the owner of the property. Also be advised that pursuant to the Town of Delafield Code of Ordinances certain other fees, costs and charges are the responsibility of the property owner.

****

I, the undersigned, have been advised that, pursuant to the Town of Delafield Code of Ordinances, if the Town Attorney, Town Engineer or any other Town professional provides services to the Town as a result of my activities, whether at my request or at the request of the Town, I shall be responsible for the fees incurred by the Town. Also, I have been advised that pursuant to the Town of Delafield Code of Ordinances, certain other fees, costs and charges are my responsibility.

Signature of Owner

4-12-24
Date

Katrina Hulls
Owner's name (please print)

Form received by: _____

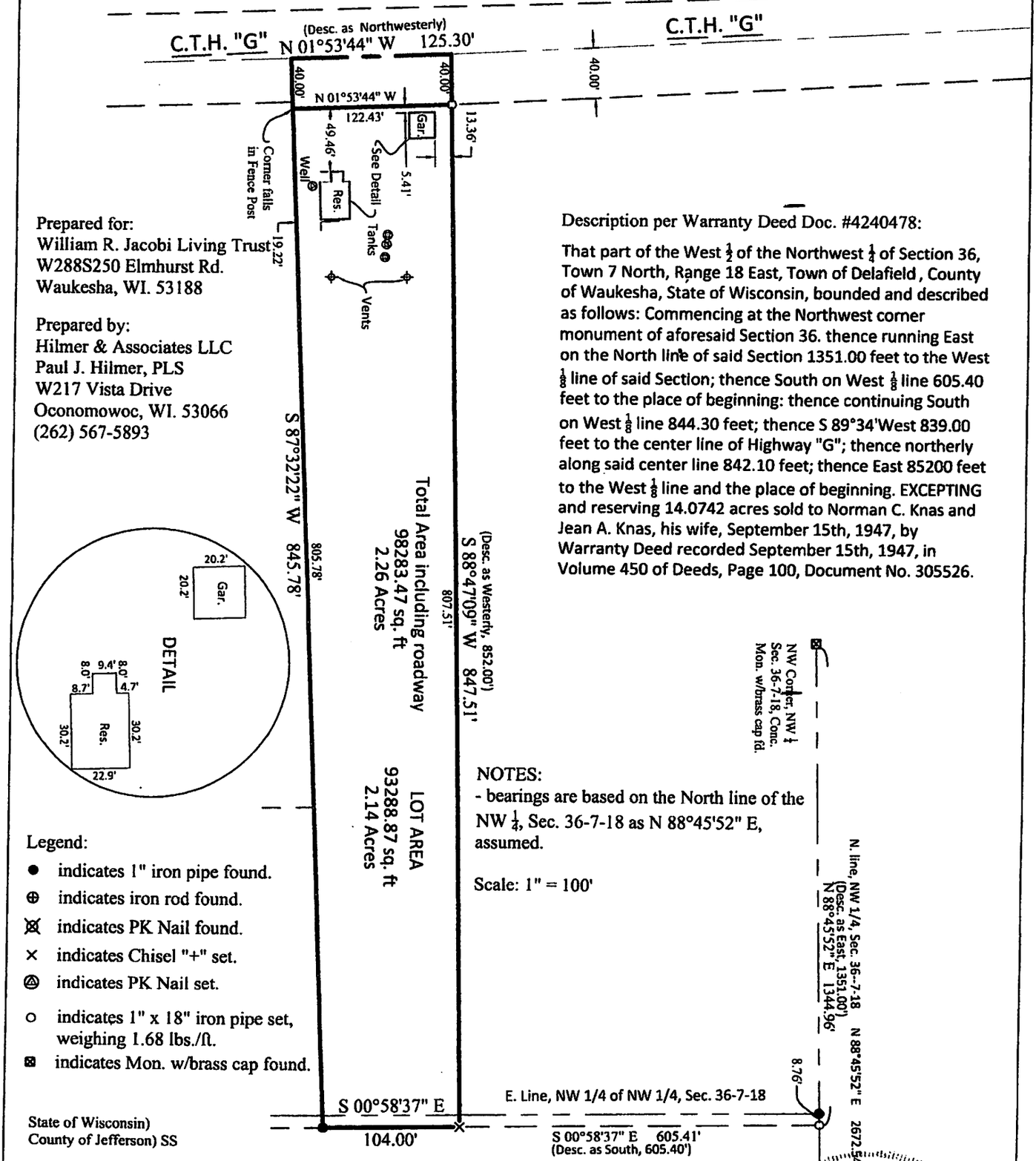
Date: _____

kat: H:\Delafield-T\Forms\Professional Fees Chargeback.docx

Hilmer & Associates LLC Land Surveying

Office: 262-567-5893 E-mail: hilmerassociates @gmail.com
W217 Vista Drive
Oconomowoc, WI. 53066

Plat of Survey # 3650



Prepared for:
William R. Jacobi Living Trust
W288S250 Elmhurst Rd.
Waukesha, WI. 53188

Prepared by:
Hilmer & Associates LLC
Paul J. Hilmer, PLS
W217 Vista Drive
Oconomowoc, WI. 53066
(262) 567-5893

Description per Warranty Deed Doc. #4240478:

That part of the West ½ of the Northwest ¼ of Section 36, Town 7 North, Range 18 East, Town of Delafield, County of Waukesha, State of Wisconsin, bounded and described as follows: Commencing at the Northwest corner monument of aforesaid Section 36. thence running East on the North line of said Section 1351.00 feet to the West ⅛ line of said Section; thence South on West ⅛ line 605.40 feet to the place of beginning: thence continuing South on West ⅛ line 844.30 feet; thence S 89°34'West 839.00 feet to the center line of Highway "G"; thence northerly along said center line 842.10 feet; thence East 85200 feet to the West ⅛ line and the place of beginning. EXCEPTING and reserving 14.0742 acres sold to Norman C. Knas and Jean A. Knas, his wife, September 15th, 1947, by Warranty Deed recorded September 15th, 1947, in Volume 450 of Deeds, Page 100, Document No. 305526.

NOTES:
- bearings are based on the North line of the NW ¼, Sec. 36-7-18 as N 88°45'52" E, assumed.

Scale: 1" = 100'

Legend:
- ● indicates 1" iron pipe found.
- ⊕ indicates iron rod found.
- ⊠ indicates PK Nail found.
- × indicates Chisel "+" set.
- ⊙ indicates PK Nail set.
- ○ indicates 1" x 18" iron pipe set, weighing 1.68 lbs./ft.
- ⊠ indicates Mon. w/brass cap found.

State of Wisconsin)
County of Jefferson) SS

I have surveyed the above described property and the above map is a true representation thereof, and shows the size and location of the property, its exterior boundaries, the location and dimensions of all visible structures thereon, fences, apparent easements, roadways and visible encroachments, if any.

This survey is made for the exclusive use of the present owners of the property, and also those who purchase, mortgage or guarantee the title thereto within one (1) year from the date thereof.

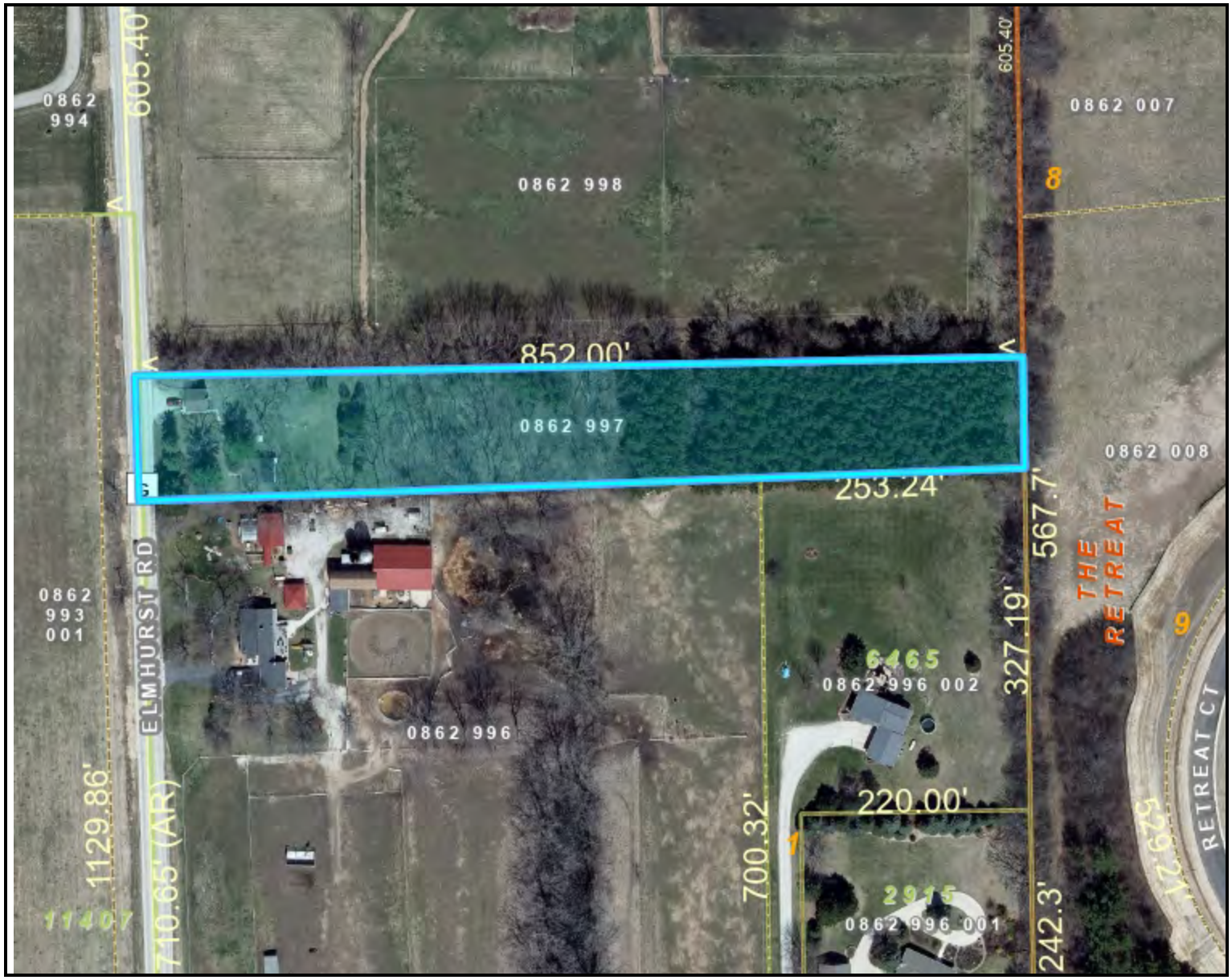
Dated at Oconomowoc, Wisconsin, this 24th day of MARCH , 2022.

Signed:
Registered Wisconsin Land Surveyor No. 2496

WISCONSIN PAUL J. HILMER S-2496 OCONOMOWOC WI LAND SURVEYOR
Not Valid Unless Stamp Is Impressed Here

MAP WAUKESHA county

Waukesha County GIS Map



Legend

- Municipal Boundary_2K
- Parcel_Dimension_2K
- Note_Text_2K
- Lots_2K
  - Lot
  - Unit
  - General Common Element
  - Outlot
- SimultaneousConveyance
  - Assessor Plat
  - CSM
  - Condominium
  - Subdivision
- Cartoline_2K
  - EA-Easement_Line
  - PL-DA
  - PL-Extended_Tie_line
  - PL-Meander_Line
  - PL-Note
  - PL-Tie
  - PL-Tie_Line
  - <all other values>
- Railroad_2K

0 147.67 Feet

Notes:

Printed: 4/16/2024

Plan Commission Report for May 7, 2024

Neumann Developments, Inc.
Welshire Farm
Agenda Item No. 5. D.

Applicant:	Bryan Lindgren, Neumann Developments on behalf of the Thomas Family
Project:	Welshire Farm Subdivision
Requested Action:	Approval of Preliminary Plat, Lot Allocation and Specific Development Plan
Zoning:	PDD #1 (Town) R-3 (County Zoning)
Location:	North of Golf Road, east of Glen Cove, west of Elmhurst Road and south of the Lake Country Trail

Report

Lot Allocation
I have performed a review of the criteria for the lot allocation found in Chapter 18.03 based on information submitted by the developer, which included the preliminary plat, draft deed restrictions and preliminary project construction plans. The number of development permits that can be issued between October 1, 2023, and September 30, 2024, is 216. They have requested 211 development permits (note that an existing house will remain on the property). The threshold for receiving development permits is 6 points. My evaluation has resulted in them receiving 8 points. In accordance with the code, the Plan Commission has the latitude to interpolate between the maximum and minimum score in every category (rounded to a whole number). Refer to the attached evaluation for a summary of the points awarded to each category and a brief explanation.

Preliminary Plat
The proposed plat encompasses the entirety of the lands to be developed. The area set aside for condominiums are shown as large parcels, in anticipation of a condominium plat when that portion of the development proceeds forward. The preliminary plat was reviewed, and comments provided to the surveyor. The comments were technical items or missing information required by the code. The surveyor has addressed my comments in a revised preliminary plat April 30, 2024. The plat is in conformance with the General Development Plan. Lot sizes and widths have been checked and are in conformance with the PDD#1 regulations. Road rights-of-way are proposed at the required widths.

The Wisconsin Statutes indicate that, “if the final plat conforms substantially to the preliminary plat as approved, including any conditions of that approval, and to local plans and ordinances adopted as authorized by law, it is entitled to approval.” It is important to include any and all

conditions from the Plan Commission in the approval of the preliminary plat, so that those conditions are addressed when the final plat is submitted for review.

Specific Development Plan (SDP)

The code requires that the developer submit for SDP approval for any portion of the project. The matter will go to the Town Board upon receipt of a recommendation from the Town Plan Commission and County Zoning Administrator.

SDP Element	Status
Detailed Site Plan	Preliminary Plat Submitted; detailed site plan for the condominium portion of the project and the clubhouse are not in the first phase and were not included in the submittal.
Architectural plans for the condominiums and clubhouse	Architectural plans for the clubhouse are not in the first phase and were not included in the submittal; Condominium architectural elevations submitted.
Landscape Plans	Detailed landscape plans submitted. Review of plans has not taken place as of the date of this report.
Grading Plans	Preliminary grading plans were submitted and reviewed; generally, drainage flow pattern will remain the same as it is currently.
Preliminary Stormwater Plan for any phases that were not reviewed as part of the GDP	The preliminary Stormwater Management Plan for the entire development was reviewed by the County prior to GDP and zoning approval.
Final Stormwater Plan	The Final Stormwater Management Plan has been provided to Waukesha County. The Town has not received any comments back from the County.
Natural Resources Protection Plan	Requested surveyor to add note and to depict on the preliminary plat the areas to be preserved.
Parking Plan	Clubhouse is not included in the request for SDP approval.
Signage Plan	No signage plan submitted at this time.
Traffic Plans	No changes to the traffic plans shown as part of the GDP. No detailed plans submitted for connections to Golf Road.
Bike and Pedestrian Plan	General location of bike and pedestrian plan shown on the preliminary plat. No construction plans submitted.
Lighting plan	Town does not have a residential lighting standard; however, lighting requirements have been provided by the developer in the covenants and restrictions.

Covenants and Restrictions
The covenants and restrictions are elements of the development for which the developer desires in order to provide architectural and use standards for the development and to lay out the organization and operation of the homeowners association. Staff has reviewed the document and find that the language does not conflict with the Town Code; however, a few minor modifications were requested for clarification purposes.

Staff Recommendation:

Lot Allocation: My review of the criteria resulted in 8 points which meets the threshold to allow the developer to have 211 development permits as requested. Subject to any comments or changes by the Plan Commission, I recommend that the Plan Commission approve 211 development permits for Welshire Farms.

Preliminary Plat: The preliminary plat meets the requirements of the Town Land Division and Development Control. I recommend approval of the preliminary plat subject to:

1. Tree removal shall not take place anywhere on the site until improvement construction plans have been submitted and approved by the Town Engineer.

2. Staff and Governmental Approval. Subject to the developer satisfying all comments, conditions and concerns of the Town Engineer in his letter to Neumann Developments, Inc. dated April 22, 2024, and all reviewing, objecting and approving bodies, which may include but not be limited to the State of Wisconsin Department of Safety and Professional Services per ch. 236, Wisconsin Statutes and the State of Wisconsin Department of Transportation per ch Trans. 233, Wisconsin Administrative Code; the State of Wisconsin Department of Administration per ch. 236, Wisconsin Statutes; the Waukesha County Parks and Land Use Department and the Waukesha County Department of Transportation; in regard to the final plat, and obtaining all necessary permits and approvals, prior to commencing construction of any improvement, whether public or private, or site development or recording of the final plat, whichever is earlier.

3. Financial Guarantee and Agreement. Subject to the Developer submitting to the Town Clerk and receiving approval as to form from the Town Attorney and as to amount from the Town Engineer, a letter of credit or cash and subject to the Developer submitting to and receiving from the Town Attorney and the Town Engineer, approval of a Developer's Agreement for the public improvements, prior to commencing construction of any improvement, whether public or private, or site development or recording of the final plat, whichever is earlier.

4. Deed Restrictions. Subject to the Developer submitting to and receiving from the Town Attorney, Town Administrator and the Town Engineer, approval of the final draft of the deed restrictions, prior to commencing construction of any improvement, whether public or private, or site development, or recording of the final plat, whichever is earlier.

5. Professional Fees. Petitioner shall, on demand, reimburse the Town for all costs and expenses of any type that the Town incurs in connection with this development, including the cost of professional services incurred by the Town (including engineering, legal, planning and other consulting fees) for the review and preparation of required documents or attendance at meetings or other related professional services for this application, as well as to enforce the conditions in this conditional approval due to a violation of these conditions.

6. Payment of Charges. Any unpaid bills owed to the Town by the Subject Property Owner or his or her tenants, operators or occupants, for reimbursement of professional fees (as described above); or for personal property taxes; or for real property taxes; or for licenses, permit fees or any other fees owed to the Town; shall be placed upon the tax roll for the Subject Property if not paid within thirty (30) days of billing by the Town, pursuant to Section 66.0627, Wisconsin Statutes. Such unpaid bills also constitute a breach of the requirements of this conditional approval that is subject to all remedies available to the Town, including possible cause for termination of the conditional approval.

Specific Development Plan

Plans that relate to the planned first phase of the development were included for review. Additional detailed review by staff is required on the various plans. No anticipated substantial modifications are anticipated, but additional construction plan drawing detail will be required to assure compliance during construction. I recommend that the Plan Commission make a recommendation to conditionally approve the Specific Development Plan submittal, subject to final staff review of detailed construction plans and signage plans and the developer satisfying all comments by the staff.

Covenants and Restrictions

The Covenants and restrictions do not conflict with the Town Code. Requirements. Subject to any comments by the Plan Commission, I recommend approval of the covenants and restrictions.

Tim Barbeau, Town Engineer
April 29, 2024

TOWN OF DELAFIELD

APPLICATION FOR PLAN COMMISSION AGENDA

Plan Commission meetings are typically held the first Tuesday of every month. All applications must be submitted at least 3 weeks before a Plan Commission meeting to make the agenda. Any late submittals will be considered at the following meeting.

(PLEASE PRINT)

Owner Information	Applicant
Name: The Thomas family	Name: Neumann Developments, Inc.
Address: N14W29542 Golf Rd.	Address: N27W24025 Paul Ct. Ste. 100
City: Pewaukee State: WI Zip: 53072	City: Pewaukee State: WI Zip: 53072
Telephone Number:	Telephone Number: 262-542-9200
Email:	Email: blindgren@neumanncompanies.com, rfritsch@neumanndevelopments.com

APPLICATION TYPE AND FEE (CHECK ALL THAT APPLY)

*Application fees are non-refundable. Fees cover costs associated with public notification, postage, copies, and document recording, however, applicants agree to pay all additional expenses that the Town may incur by virtue of contracted plan review services including but not limited to: legal, surveying and engineering costs.

☐ Site Plan	$150.00	☐ Home Occupation	$50.00
☐ Site Grading Plan	$50.00	☐ Zoning Amendment	$300.00
☐ Lighting Plan	$50.00	☐ Land Use Amendment	$300.00
☐ Signage Plan	$75.00	☐ Conditional Use	$225.00
☑ Preliminary Plat	$300.00	☐ Plan of Operation	$150.00
☐ Final Plat	$150.00	☐ Planned unit Development	$225.00
☐ Certified Survey Map	$250.00	☐ Conceptual Plan Review	$50.00
☐ Developer's Agreement	$100.00	☐ Other	$50.00 minimum

PROJECT NAME: Welshire Farm

Property Address: N14W29542 Golf Rd.

Tax ID/Parcel ID: DELT 0811994, 0809995, 0809996 Lot Size: ≈ 151 acres

Current Zoning: ~~A-1, C-1, Shoreland~~ PDD-1 Proposed Zoning (if applicable) ~~PDD-1~~ N/A

Present Use: Agricultural Intended Use (if applicable): Residential

A complete application along with the appropriate fees shall be submitted by the deadline outlined at the top of the application. In order for an application to be considered complete, the application shall include the required number of site plans/maps, and all of the necessary supporting information as indicated on the project review checklist. If applying for a conditional use or development agreement, a document showing vested interest in the property is required. The Town of Delafield reserves the right not to accept an application that is deemed incomplete.

TOWN OF DELAFIELD PLAN COMMISSION APPLICATION

Project Description

Please answer the questions below that pertain to your request. If necessary, please attach a separate sheet.

PETITION FOR REZONING

In the space below, please describe the purpose of the rezoning.

N/A

PETITION FOR LAND USE AMENDM

In the space below, please describe the purpose of the Land Use Amendment.

N/A

PETITION FOR CONDITIONAL USE

In the space below, please describe the purpose of the Conditional Use.

N/A

PETITION FOR CERTIFIED SURVEY MAP / PRELIMINARY PLAT / FINAL PL

In the space below, please describe the intention of the land division.

Specific Development Plan for 211 residential unit neighborhood.
and preliminary plat review

PETITION FOR SITE PLAN / PLAN OF OPERATION / OTHER APPLICATION

In the space below, please describe the intention for the site plan, plan of operation, or other application.

See Above

NEUMANN
DEVELOPMENTS, INC.

May 7, 2024

Town of Delafield
C/O Dan Green
W302N1254 Maple Avenue
Delafield, WI 53018

Dear Plan Commission & Town Board,

Neumann Developments intends to work diligently to ensure the needs of the Town of Delafield Fire Department are met. We will continue to review construction drawings with Staff and facilitate revisions to accommodate public safety services, as discussed with Town departments.

Sincerely,

Ryan Fritsch

Ryan Fritsch
Neumann Developments. Inc.

LEGAL DESCRIPTION

Being a part of the Southeast 1/4 of the Northeast 1/4 and the Northeast 1/4 of the Southeast 1/4 of Section 23, in Town 7 North, Range 18 East, Town of Delafield, Waukesha County, Wisconsin, now being more particularly bounded and described as follows:

Commencing at the Northwest corner of said Southwest 1/4, thence South 88°51’15” East along the North line of said Southwest 1/4 Section, 2681.40 feet to the Southwest corner of the Northeast 1/4 Section; Thence North 89°21’41” East along the South line of the Northeast 1/4 Section, 1336.50 feet to the East line of the East 1/2 of the Northeast 1/4 of said Section and the place of beginning of the lands hereinafter described.

Thence North 01°05’59” West along said East line, 1220.40 feet to the South line of a W.E.P.C.O. Right-of-Way; Thence North 88°50’36” East along said South line, 699.31 feet to a point on the West Right-of-Way of “Elmhurst Road”; Thence South 00°34’32” West along said West line, 1226.96 feet to a point on the South line of said Northeast 1/4 Section; Thence South 89°21’41” West along said South line, 25.26 feet to a point; Thence South 00°33’48” West along the West Right-of-Way of “Elmhurst Road”, 116.68 feet to a point; Thence Southeasterly 446.63 feet along the arc of a curve whose center lies to the East, whose radius is 1196.28 feet, whose central angle is 21°23’28” and whose chord bears South 10°07’56” East 444.04 feet to a point; Thence South 13°45’04” East along the West Right-of-Way of “Elmhurst Road”, 451.55 feet to a point on the North Right-of-Way of “Interstate “94””; Thence South 73°59’23” West along said North line, 846.37 feet to a point; Thence South 87°20’08” West along said North line, 10.38 feet to a point on the West line of the West 1/2 of the Southeast 1/4 of said Section; Thence North 00°04’04” East along said West line, 1219.20 feet to the point of beginning.

Said Parcel contains 1,630,250 Square Feet (or 37.4254 Acres) of land more or less.

LEGAL DESCRIPTION

Being a part of the Southwest 1/4 of the Northeast 1/4 of Section 23, in Town 7 North, Range 18 East, Town of Delafield, Waukesha County, Wisconsin, now being more particularly bounded and described as follows:

Commencing at the Northwest corner of said Southwest 1/4, thence South 88°51’15” East along the North line of said Southwest 1/4 Section, 2681.40 feet to the Southwest corner of the Northeast 1/4 Section and the place of beginning of the lands hereinafter described.

Thence North 00°19’12” East along the East line of said Northeast 1/4 Section, 1208.72 feet to a point on the South line of a W.E.P.C.O. Right-of-Way: Thence North 88°50’36” East along said South line, 1306.51 feet to a point on the East line of the East 1/2 of the Northeast 1/4 of said Section; Thence South 01°05’59” East along said East line, 1220.40 feet to a point on the South line of said Northeast 1/4 Section; Thence South 89°21’41” West along said South line, 1336.50 feet to the point of beginning.

Said Parcel contains 1,604,850 Square Feet (or 36.8423 Acres) of land more or less.

LEGAL DESCRIPTION

Being a part of the Northeast 1/4 of the Southwest 1/4 and the Northwest 1/4 of the Southeast 1/4 of Section 23, in Town 7 North, Range 18 East, Town of Delafield, Waukesha County, Wisconsin, now being more particularly bounded and described as follows:

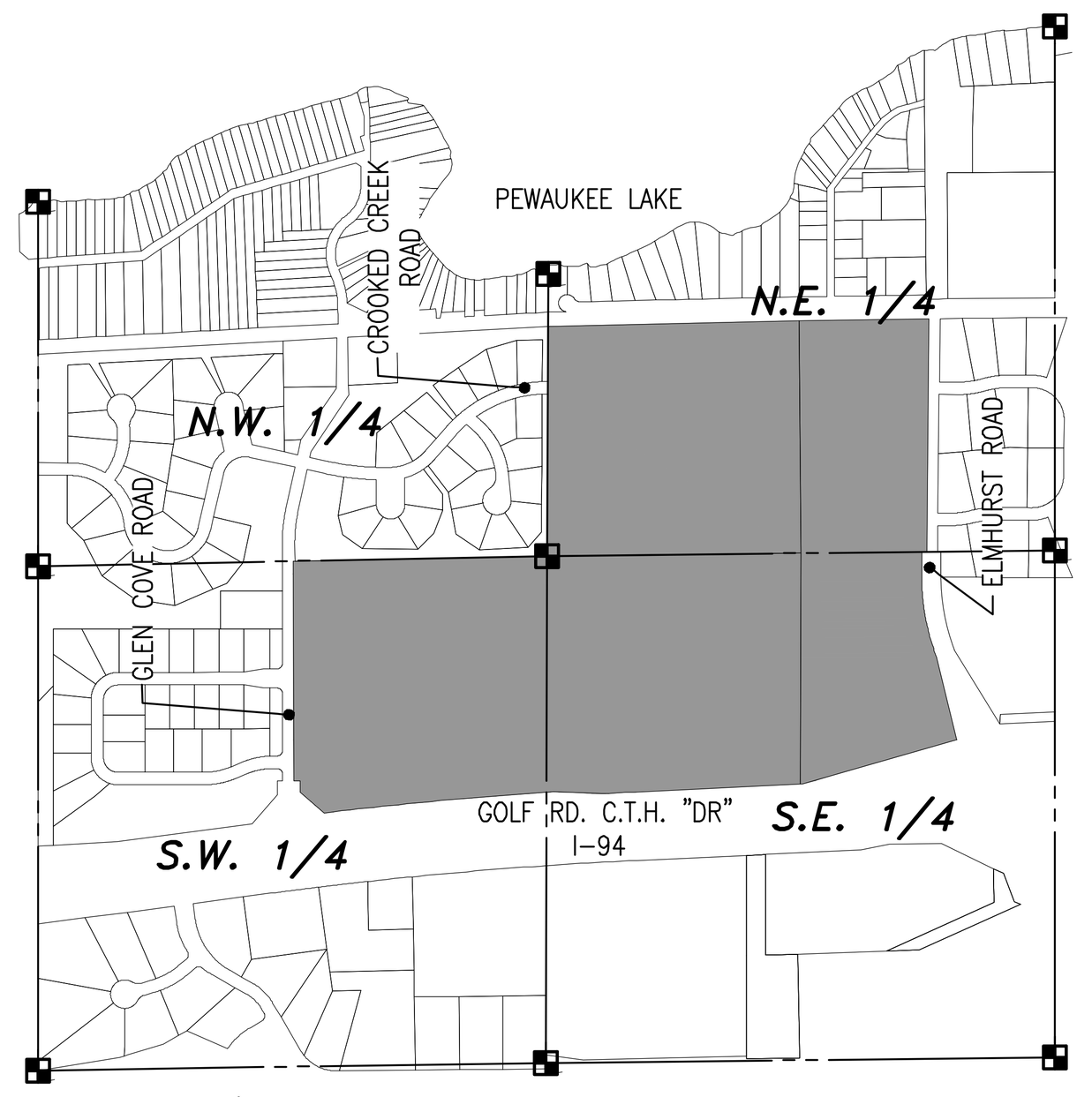
Commencing at the Northwest corner of said Southwest 1/4, thence South 88°51’15” East along the North line of said Southwest 1/4 Section, 1345.64 feet to the place of beginning of the lands hereinafter described.

Thence North 88°51’15” East along said North line, 1335.76 feet to the Northeast corner of said Southwest 1/4 Section; Thence North 89°21’41” East along the North line of said Southeast 1/4 Section, 1336.50 feet to a point on the East line of the East 1/2 of said Southeast 1/4 Section; Thence South 00°04’04” West along said East line, 1219.20 feet to a point on the North Right-of-Way of “Interstate “94””; Thence South 87°20’08” West along said North line, 878.98 feet to a point; Thence Westerly 168.94 feet along the arc of a curve whose center lies to the North, whose radius is 23,123.33 feet, whose central angle is 00°25’06” and whose chord bears South 87°07’34” West 168.94 feet to a point; Thence North 87°44’18” West along said North line, 253.63 feet to a point; Thence Westerly 1214.05 feet along the arc of a curve whose center lies to the South, whose radius is 23,148.33 feet, whose central angle is 03°00’18” and whose chord bears South 84°47’22” West 1213.91 feet to a point on the East Right-of-Way of “Glen Cove Road”; Thence North 48°47’43” West along said East line, 166.11 feet to a point; Thence North 00°03’57” West along said East line, 60.72 feet to a point; Thence South 89°56’03” West along said East line, 35.00 feet to a point; Thence North 00°03’57” West along said East line, 1157.05 feet to the point of beginning.

Said Parcel contains 3,363,896 Square Feet (or 77.2244 Acres) of land more or less.

PRELIMINARY PLAT OF WELSHIRE FARM

LOCATED IN THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4, THE NORTHEAST 1/4 AND THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4, AND THE SOUTHEAST 1/4 AND THE SOUTHWEST 1/4 OF THE NORTHEAST 1/4, ALL IN SECTION 23, TOWN 7 NORTH, RANGE 18 EAST, IN THE TOWN OF DELAFIELD, WAUKESHA COUNTY, WISCONSIN.



LOCALITY MAP:
SEC. 23,
T.7 N., R.18 E.
SCALE: 1"=1000'

LEGEND

●	INDICATES 1" IRON PIPE FOUND
○	INDICATES SET 0.75" REBAR, 18" LONG WEIGHING 1.50 LBS/LIN. FOOT
⊕	INDICATES SOIL BORING LOCATION
—— SAN ——	INDICATES EXISTING SANITARY SEWER
------- 700 -------	INDICATES EXISTING CONTOUR
—— OW ——	INDICATES EXISTING OVERHEAD WIRE
●	INDICATES EXISTING POWER POLE
—— —— ——	INDICATES PROPOSED SANITARY SEWER
— — — — —	INDICATES PROPOSED STORM SEWER

DEVELOPMENT SUMMARY:

1. Subdivision contains approximately 151.4921 Acres.
2. Subdivision contains 158 Lots and 10 Outlots.
3. All lots to be served by Sanitary Sewer.
4. Public Roads to have Concrete Curb and Gutter, Asphalt Pavement with Storm Sewer.
5. All lots to have Underground Telephone, Electric, and Gas Service.
6. Proposed Zoning in Town's Jurisdiction = "PDD #1" (Planned Development District 1).
7. Outlots 1-11 contain open space.
8. Lots 156 and 157 contains Stormwater Management Facilities and is a future condominium development.
9. Outlot 1, 2, and 3 contains a Wetland and Primary Environmental Conservancy Area and open space.
10. Outlots 1-8 contain Stormwater Management Facilities and open space, stormwater Management Facilities are located on Outlots 1-8 of this Subdivision. The Owners of the residential Lots within this Subdivision shall each be liable for an equal undivided fractional share of the cost to repair, maintain or restore said Stormwater Management Facilities within this Subdivision. Said repairs, maintenance and restoration shall be performed by the Owners of all Lots within this Subdivision.
11. The Town of Delafield will not be party to construction of a sound barrier wall, nor will the Town participate in any public mitigation of sound or noise abatement associated with Golf Road or I-94.
12. The soil borings shown hereon done by Gestra Engineering Inc. on May 15, 2023, Geotechnical Engineering Report Project No. 23083-10.
13. All lands shown as wetlands or environmental corridor shall not be disturbed, except for nature path construction and minor grading on Lots 17 and 18. Also, tree lines on Lot 156, Outlot 3, Outlot 5 and Outlot 6 shall be preserved.

WETLAND DELINEATION NOTE:

Wetlands shown hereon was delineated on March 16th, 2023 by Heartland Ecological Group and provided to Trio Engineering, LLC. in digital format.

PRIMARY ENVIRONMENTAL CORRIDOR NOTE:

Primary Environmental Corridor shown hereon was delineated on March 16th, 2023 by Heartland Ecological Group and provided to Trio Engineering, LLC. in digital format.

TRANS 233.105(1) NOISE LEVELS

§233.105(1) The lots of this land division may experience noise at the levels exceeding the levels in §Trans 405.04, Table I. These levels are based on federal standards. The Department of Transportation is not responsible for abating noise from existing state trunk highways or connecting highways, in the absence of any increase by the Department to the highway's through-lane capacity.

TRANS 233.05 ACCESS TO STATE TRUNK HIGHWAY

§233.05(1) As owner I hereby restrict all lots, in that no owner, possessor, user, nor licensee, nor other person shall have any right of direct vehicular ingress or egress with USH I-94, as shown on the plat; it being expressly intended that this restriction shall constitute a restriction for the benefit of the public according to §236.293, Stats., and shall be enforceable by the Department of Transportation.

BASEMENT RESTRICTION FOR GROUNDWATER NOTE:

Although all Lots in the Subdivision have been reviewed and approved for development with single-family residential use in accordance with Section 236 Wisconsin Statutes, some Lots contain soil conditions that, due to the possible presence of groundwater near the surface, may require additional soil engineering and foundation design with regard to basement construction. It is recommended that a licensed professional engineer design a basement and foundation that will be suitable to withstand the various problems associated with saturated soil conditions on basement walls or floors or that other special measures be taken. Soil conditions should be subject to each owner's special investigation prior to construction and no specific representation is made herein.

BASEMENT RESTRICTION FOR BEDROCK NOTE:

Although all Lots in the Subdivision have been reviewed and approved for development with single and multi-family residential use in accordance with Section 236 Wisconsin Statutes, some Lots contain soil conditions that, due to the possible presence of bedrock near the ground surface, may require additional soil engineering and foundation design with regard to basement construction. It is recommended that a licensed professional engineer be consulted regarding the construction of basements in these area where bedrock may be present near the ground surface. Soil conditions should be subject to each owner's special investigation prior to construction and no specific representation is made herein.

LOT CHARACTERISTICS

SINGLE-FAMILY LOW DENSITY
Zone 1: Lots 1 - 8
- Lot Size = 20,000 sf
- Average Lot Width = 100 feet
- Setbacks:
  - Min. Road = 35'
  - Side Offset = 15'
  - Rear Offset = 20'
  - Wetland = 75'
- Max Building Footprint = 17.5% of lot
- Open Space per Lot = 70% of lot

RESIDENTIAL SINGLE-FAMILY LOW-MEDIUM DENSITY
Zone 2: Lots 9 - 37
- Lot Size = 15,000 sf
- Average Lot Width = 90 feet
- Setbacks:
  - Min. Road = 25'
  - Side Offset = 12.5'
  - Rear Offset = 20'
  - Wetland = 75'
  - Elmhurst Rd = 50'
- Max Building Footprint = 25% of lot
- Open Space per Lot = 60% of lot

SINGLE-FAMILY MEDIUM DENSITY
Zones 3 & 4: Lots 38 - 155
- Lot Size = 10,000 sf
- Average Lot Width = 75 feet
- Setbacks:
  - Min. Road = 25'
  - Side Offset = 10'
  - Rear Offset = 20'
  - Wetland = 75'
  - Glen Cove Rd = 100'
  - Golf Rd (CTH DR) = 100'
  - Elmhurst Rd = 50'
- Max Building Footprint = 30% of lot
- Open Space per Lot = 60% of lot

DUPLEX CONDOS
Zone 3: Lots 156 & 157
- Density = 4 un/ac
- Setbacks:
  - Min. Road = 25'
  - Side Offset = 20' (building to building)
  - Rear Offset = N/A
  - Wetland = 75'
  - Glen Cove Rd = 100'
  - Golf Rd (CTH DR) = 100'
- Max Building Footprint = 25%
- Open Space per Lot = 60% of lot

SITE DATA TABLE

- Gross Area		151.49 acres
- Road Dedication (Glen Cove Rd & Elmhurst Rd)		- 0.44 acres
- TOTAL AREA		151.05 acres
- Proposed Zoning: Planned Development District #1		
Zone 1:	23.2 acres	8 lots
Zone 2:	29.94 acres	29 lots
Zone 3:	50.08 acres	37 lots + 56 units
Zone 4:	47.83 acres	81 lots
Existing Farmhouse		1 lot
TOTAL	151.05 acres	**212 units**

- DENSITY = 212 / 151.05 = **1.404 un/ac**

STORMWATER PLAN NOTES:

- THE PROPOSED DEVELOPMENT (ALL PHASES) ARE SERVED BY ON-SITE SHARED STORMWATER FACILITIES, AS SHOWN ON THE PRELIMINARY STORMWATER PLAN.
- THE STORMWATER FACILITIES WILL BE CONSTRUCTED WITH THEIR CORRESPONDING PHASE OF DEVELOPMENT.
- THE STORMWATER FACILITIES WILL BE LOCATED WITHIN OUTLOTS AND/OR DRAINAGE EASEMENTS.
- ALL RESIDENTIAL LOTS AND CONDOMINIUM UNITS WILL BE PART OF A MASTER HOMEOWNERS ASSOCIATION.
- THE MASTER HOMEOWNERS ASSOCIATION WILL BE RESPONSIBLE FOR THE REPAIR, MAINTENANCE AND RESTORATION OF THE STORMWATER PRACTICES.

HORIZONTAL DATUM PLANE:

All bearings are referenced to Grid North of the Wisconsin State Plane Coordinate System, South Zone (NAD-83/2011), in which the North line of the S.W. 1/4 of Section 23, Town 7 North, Range 18 East, bears North 88°51'15" East.

VERTICAL DATUM PLANE:

All elevations are referenced to the National Goedetic Vertical Datum of 1988. Contours/Elevations shown on this Preliminary Plat are a combination of GIS data and a ground survey performed by Trio Engineering, LLC.

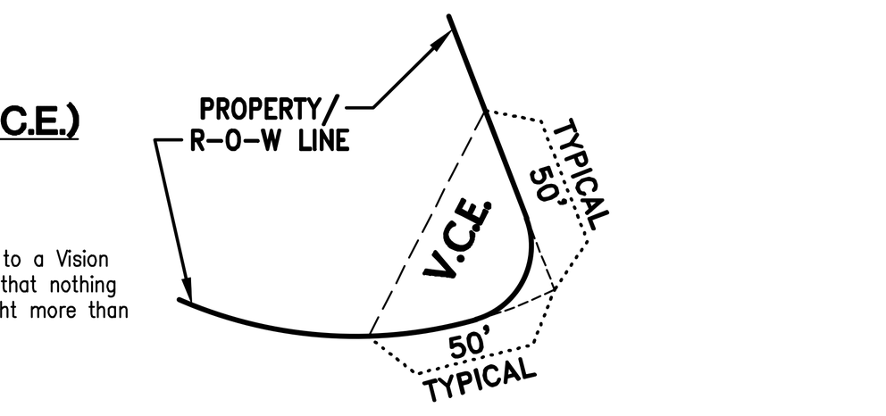
PROPERTY ADDRESSES AND OWNERS:

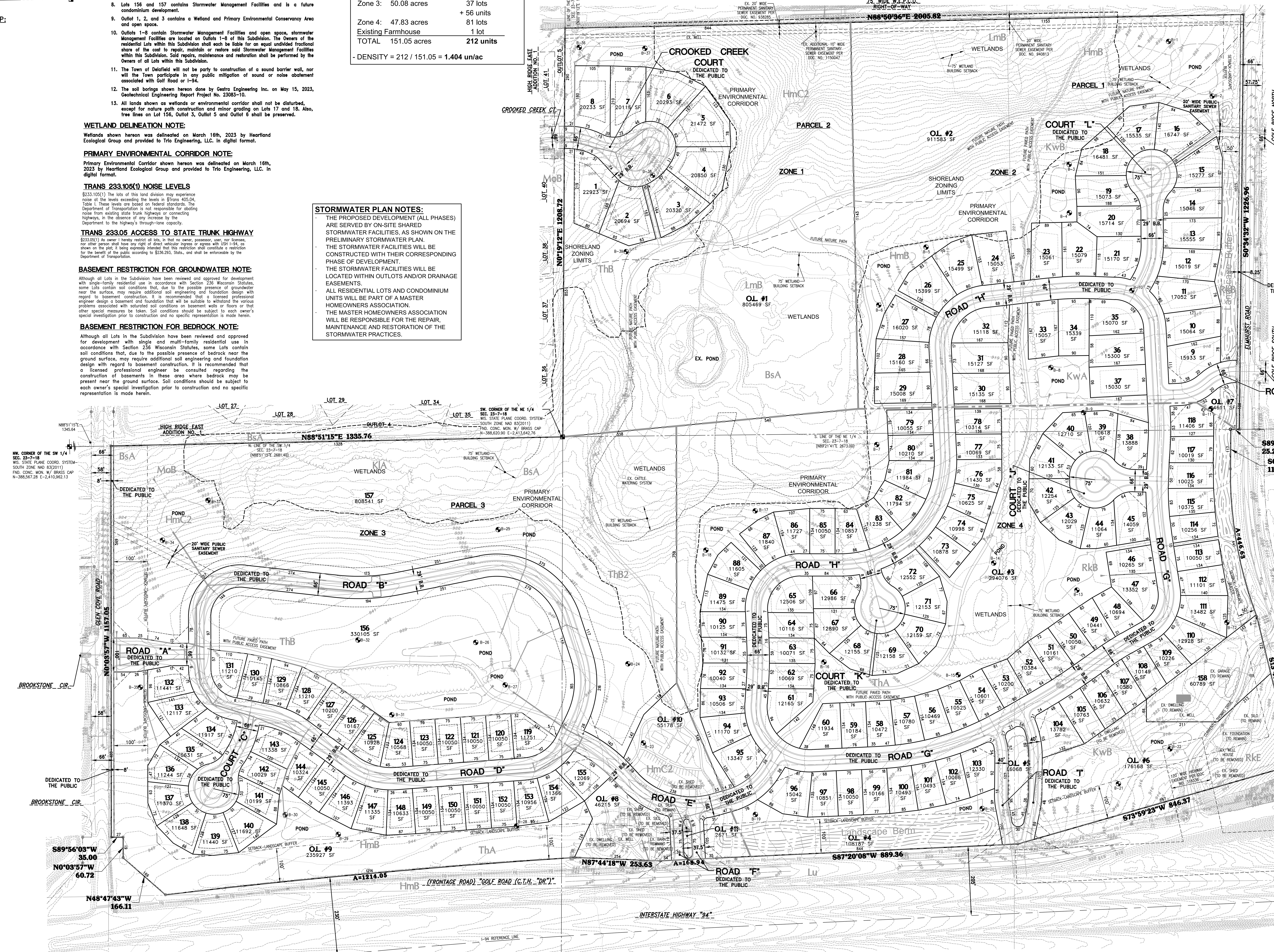
PARCEL 1-ADDRESS: W29N1527 THOMAS RD.
OWNERS: THE ROBERT G. AND ANN B. THOMAS REVOCABLE TRUST AND AMY E THOMAS ET AL
PARCEL 2- ADDRESS: NOT ASSIGNED
OWNERS: KELLEN H WESSON AMY THOMAS ET AL
PARCEL 3- ADDRESS: N14W29542 GOLF ROAD
OWNERS: KELLEN H WESSON AMY THOMAS ET AL

VISION CORNER EASEMENT DETAIL (V.C.E.)

V.C.E. APPLIES TO:

Corner lots shown on this plat are subject to a Vision Corner Easement as shown on this plat in that nothing may be grown, stored or erected to a height more than two feet above the intersection elevation.





SCALE: 1"=100'
0 50 100 200

SURVEYOR'S CERTIFICATE:

I hereby certify that this preliminary plat is a correct representative of the exterior boundary and that I have fully complied with the provisions of the subdivision and platting code of the Town of Delafield.

Date: 3-12-24
REVISED APRIL 30th, 2024.

Ted R. Indermuehle, P.L.S.
Professional Land Surveyor S-3119

WISCONSIN TED R. INDERMUEHLE S-3119 BROOKFIELD, WI LAND SURVEYOR

REVIEWING AGENCIES:

- State of Wisconsin, Department of Administration
- Waukesha County, Department of Parks and Land Use
- State of Wisconsin Department of Natural Resources
- Town of Delafield
- City of Delafield (Extraterritorial)

DEVELOPER:
NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, STE. 100
PEWAUKEE, WI 53072
PHONE: (262) 542-9200
FAX: (262) 349-9324

ENGINEER / SURVEYOR:
TRIO ENGINEERING, LLC
4100 N. CALHOUN RD. SUITE 300
BROOKFIELD, WISCONSIN 53005
PHONE: (262) 790-1480

TRIO
4100 N. CALHOUN ROAD, SUITE 300 BROOKFIELD, WI 53005 PHONE: (262) 790-1480 EMAIL: tindermuehle@trio...

PROJECT:
WELSHIRE FARM
TOWN OF DELAFIELD, WISCONSIN
RESIDENTIAL SUBDIVISION
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT
PEWAUKEE, WI 53072

JOB NUMBER:	DESCRIPTION:	REVISIONS:
21-071-953-01	PRELIMINARY PLAT	4-30-2024

SHEET: 1 OF 1

THOMAS-WELSHIRE PROPERTY DELAFIELD\DRAWINGS\SURVEY\PLATS\150PRP01.DWG

NEUMANN
DEVELOPMENTS, INC.

Example Architectural Elevations

The Reserve at Welshire Farm

NEUMANN DEVELOPMENTS, INC. * N27 W24025 PAUL CT. SUITE 100 * PEWAUKEE, WI 53072
262-542-9200 * NEUMANNDEVELOPMENTS.COM

NEUMANN DEVELOPMENTS, INC.

Example Architectural Elevations

The Reserve at Welshire Farm

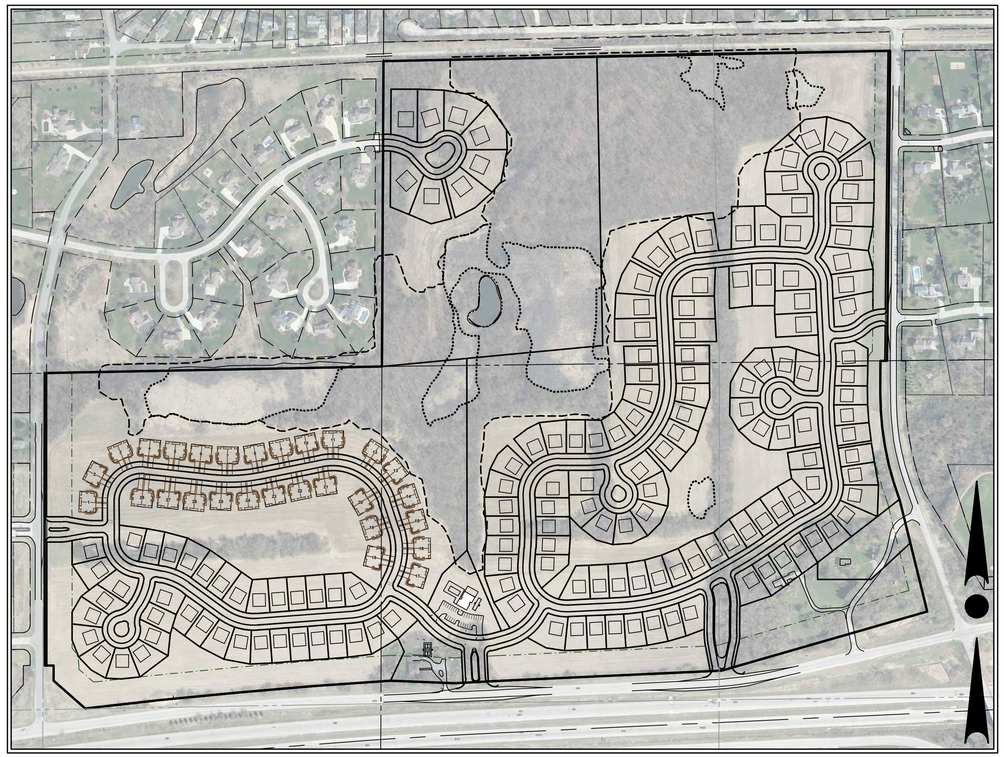
NEUMANN DEVELOPMENTS, INC. * N27 W24025 PAUL CT. SUITE 100 * PEWAUKEE, WI 53072
262-542-9200 * NEUMANNDEVELOPMENTS.COM

WELSHIRE FARM

SINGLE AND MULTI-FAMILY RESIDENTIAL DEVELOPMENT

PRELIMINARY SITE DEVELOPMENT PLANS

TOWN OF DELAFIELD, WISCONSIN



SITE PLAN
SCALE: 1" = 300'

GENERAL NOTES

1. THE LATEST EDITIONS OF THE FOLLOWING DOCUMENTS AND ANY SUPPLEMENTS THERETO, SHALL GOVERN ALL CONSTRUCTION ITEMS ON THIS PLAN UNLESS OTHERWISE NOTED.

   -STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, 6TH EDITION (SSSWCW)
   -THE WISCONSIN D.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION
   -WDNR STORMWATER RUNOFF TECHNICAL STANDARDS.
   -WISDOT PAL APPROVED EROSION CONTROL MEASURES LIST, LATEST EDITION.
   -TOWN OF DELAFIELD TECHNICAL STANDARDS.

2. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO MINIMIZE EROSION, WATER POLLUTION AND SILTATION CAUSED BY CONSTRUCTION OF THIS PROJECT. EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS.

3. EROSION CONTROL PLAN: PRIOR TO BEGINNING WORK, AN APPROVED EROSION CONTROL PLAN WILL BE PROVIDED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY IMPLEMENTING THE APPROVED PLAN.

4. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATIONS OF THE BENCHMARKS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL ALSO FIELD VERIFY LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES, AND VERIFY FLOOR, CURB OR PAVEMENT ELEVATIONS WHERE MATCHING INTO EXISTING WORK. THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL CONTROL BY REFERENCING SHOWN COORDINATES TO KNOWN PROPERTY LINES. NOTIFY ENGINEER OF DISCREPANCIES IN EITHER VERTICAL OR HORIZONTAL CONTROL PRIOR TO PROCEEDING WITH WORK.

5. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION (CALL DIGGERS HOTLINE AT 800-242-8511). COST OF REPLACEMENT OR REPAIR OF EXISTING UTILITIES DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

6. EXISTING UTILITY INFORMATION IS SHOWN FROM SURVEY WORK, FIELD OBSERVATIONS, AVAILABLE PUBLIC RECORDS, AND AS-BUILT DRAWINGS. EXACT LOCATIONS AND ELEVATIONS OF UTILITIES SHALL BE DETERMINED PRIOR TO INSTALLING NEW WORK. EXCAVATE TEST PITS AS REQUIRED.

7. PROPERTY CORNERS SHALL BE CAREFULLY PROTECTED UNTIL THEY HAVE BEEN REFERENCED BY A PROFESSIONAL LAND SURVEYOR. PROPERTY MONUMENTS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

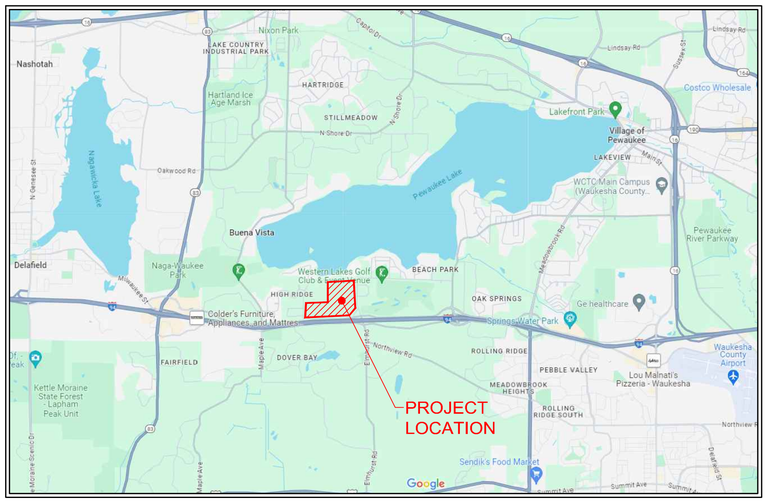
8. ENGINEER SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF PERFORMING ANY CONSTRUCTION.

9. ALL TRENCHING SHALL BE PERFORMED ACCORDING TO OSHA STANDARDS.

10. ALL ITEMS SHALL INCLUDE ALL THE NECESSARY MATERIALS AND LABOR TO COMPLETE THE ITEM IN PLACE.

11. THE CONTRACTOR SHALL CLEAN ALL ADJACENT STREETS OF ANY SEDIMENT OR DEBRIS BY SWEEPING BEFORE THE END OF THE WORKING DAY OR AS REQUIRED BY THE CITY OF PEWAUKEE.

12. THE CONTRACTOR MUST AND IS REQUIRED TO NOTIFY THE TOWN OF DELAFIELD SEWER AND WATER UTILITY A MINIMUM OF 48 HOURS IN ADVANCE OF WATER MAIN FILLING, WATER MAIN FLUSHING, WATER MAIN TESTING AND WATER MAIN CONNECTIONS. NO CONNECTION SHALL BE MADE TO THE EXISTING WATER SYSTEM UNTIL SAFE SAMPLES FROM THE NEW MAIN HAVE BEEN OBTAINED.



LOCATION MAP
NOT TO SCALE

DEVELOPER:
NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT,
SUITE 100
PEWAUKEE, WI 53072
PHONE: (262) 542-9200
FAX: (262) 349-9324

ENGINEER:
TRIO ENGINEERING, LLC
4100 N CALHOUN ROAD, SUITE 300
BROOKFIELD, WI 53005
CONTACT: MR. JOSHUA PUDELKO, P.E., M.S.
PHONE: 262-790-1480
FAX: 262-790-1481
EMAIL: jpudelko@trioeng.com

SHEET INDEX

WISCONSIN
JOSHUA D. PUDELKO
E-39920
WAUWATOSA, WI
PROFESSIONAL ENGINEER

DESIGN • LAND SURVEYING
TRIO
CIVIL ENGINEERING

4100 N. CALHOUN RD., SUITE 300
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: jpudelko@trioeng.com

PROJECT:
WELSHIRE FARM
TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

REVISION HISTORY

DATE	DESCRIPTION
04/09/2024	PRELIMINARY SUBMITTAL

DATE:
APRIL 9, 2024

JOB NUMBER:
21-071-953

DESCRIPTION:
COVER SHEET

SHEET
T1

X:\2021\21-071-953 THOMAS-WELSHIRE PROPERTY DELAFIELD\DRAWINGS\PRELIMINARY\WELSHIRE FARMS_COVER_22X34.DWG

LEGEND:

795	– EXISTING CONTOUR
795	– PROPOSED CONTOUR
←	– FLOW ARROW
× 779.40	– PROPOSED SPOT ELEVATION
FG XXX.X	– FINISH YARD GRADE
EXP XXX.X	– EXPOSURE YARD GRADE

OAKTON ROAD

ELMHURST ROAD

GLEN COVE ROAD

GOLF ROAD

C.T.H. "DR"

WET POND 13P

WET POND 9P

WET POND 11P

WET POND 3P

WET POND 12P

WET POND 1.2P

WET POND 7P

WET POND 6P

RAIN GARDEN 7RG

RAIN GARDEN 5RG

BASIN 8B

BASIN 2B

BASIN 1.2B

BASIN 1.1B

BASIN 4B

BASIN 8B

CROOKED CREEK ROAD

NORTH CUL-DE-SAC

E. CIRCLE NORTH

CENTER CUL-DE-SAC

SOUTH CUL-DE-SAC

CONDO ROAD

BROOKSTONE CIRCLE

W. CUL-DE-SAC

W. CIRCLE SOUTH

CLUBHOUSE ROAD

E. CIRCLE SOUTH

Landscape Berm

0 75 150 300

SCALE: 1" = 150' (22"X34")

SCALE: 1" = 300' (11"X17")

CONTRACTOR IS REQUIRED TO CONTACT DIGGERS HOTLINE TOLL FREE TO OBTAIN LOCATION OF UNDERGROUND UTILITIES PRIOR TO COMMENCING THE WORK. WISCONSIN STATUTE 182.0715 REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

CALL DIGGERS HOTLINE 1-800-242-8511

NOTE:
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WISCONSIN PROFESSIONAL ENGINEER
JOSHUA D. PUDELKO E-39620 WAUWATOSA, WI

TRIO DESIGN • LAND SURVEYING CIVIL ENGINEERING
4100 N. CALHOUN RD., SUITE 300
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PHONE: (262) 790-1480
FAX: (262) 790-1481
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PROJECT:
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BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
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JOB NUMBER:
21-071-953

DESCRIPTION:
OVERALL GRADING & DRAINAGE PLAN

SHEET
C1.00

X:\2021\21-071-953 THOMAS-WELSHIRE PROPERTY DELAFIELD\DRAWINGS\PRELIMINARY\WELSHIRE FARMS_GRADING_22X34.DWG

WET POND 3P
N.W.L. – 927.00
BOTTOM – 922.00
TOP OF BERM – 933.00
SPILLWAY – 932.00
100-YR – 932.00

10' WIDE SPILLWAY

POND OUTLET PIPE AND STRUCTURE

WETLANDS

GLEN COVE ROAD

CONDO ROAD

BROOKSTONE CIRCLE

W. CIRCLE SOUTH

Landscape Berm

PROP. BASIN 1.2B

PROP. BASIN 1.1B

1	FG 938.1	
2	EXP 934.1	FG 938.1
3	EXP 934.1	FG 938.8
4	EXP 935.3	FG 939.8
5	EXP 936.3	FG 940.3
6	EXP 937.0	FG 941.0
7	EXP 937.7	FG 941.7
8	EXP 936.4	EXP 934.4 FG 942.4
9	EXP 934.7	FG 942.7
10	EXP 934.7	FG 942.7
22		FG 942.6
23	FG 942.6	
24	FG 942.0	
25	FG 941.5	
26	FG 940.9	
27	FG 940.7	
28	FG 940.7	
127	EXP 941.5	
128	EXP 941.1	FG 945.1
129	EXP 940.7	FG 944.7
130	EXP 940.3	FG 944.3
131	EXP 939.9	FG 943.9
132		FG 941.1

0 20 40 80
SCALE: 1" = 40' (22"X34")
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E-39920
WAUWATOSA, WI
PROFESSIONAL ENGINEER

TRIO
DESIGN • LAND SURVEYING
CIVIL ENGINEERING
4100 N. CALHOUN RD., SUITE 300
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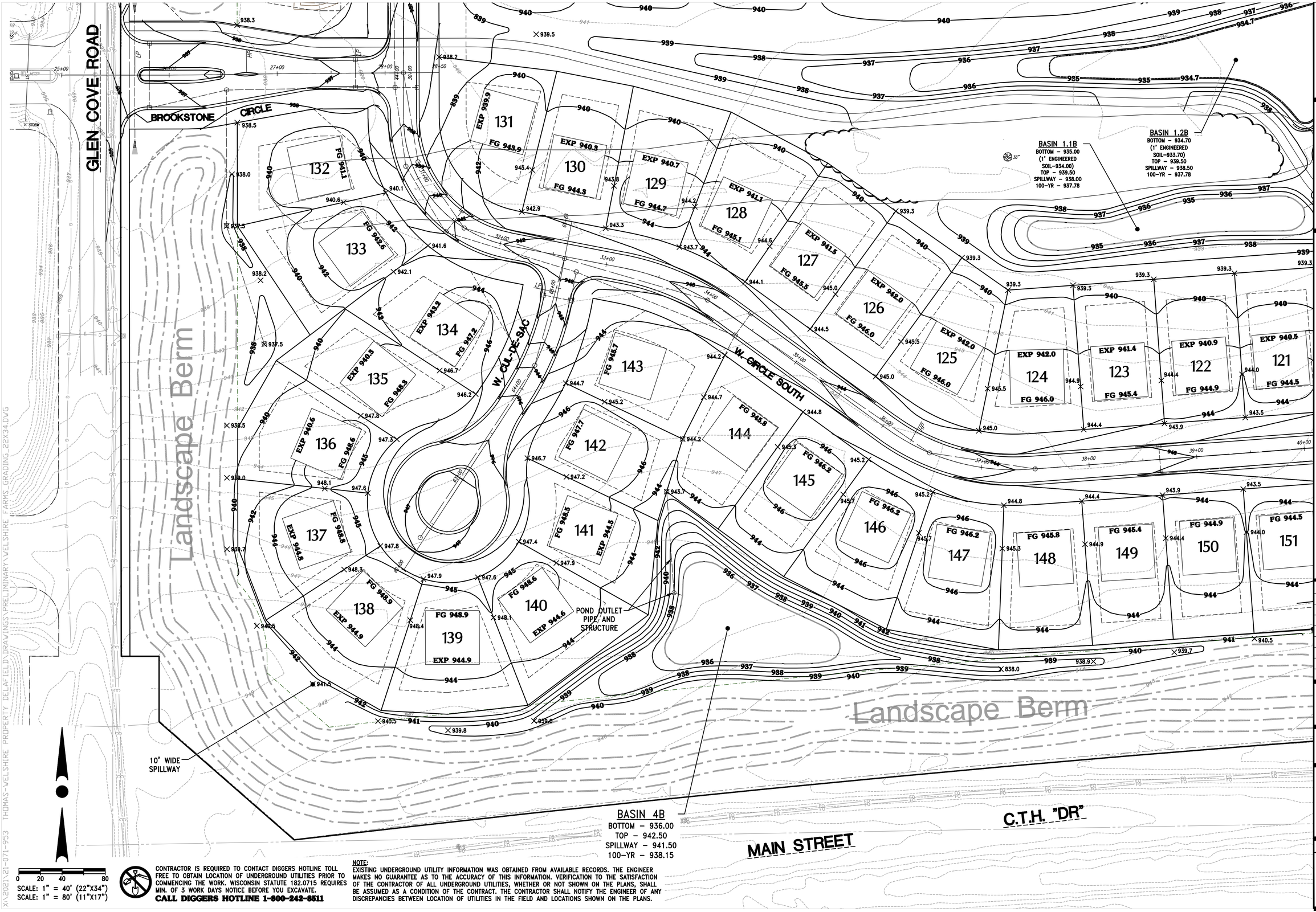
21-071-953

DESCRIPTION:
GRADING & DRAINAGE PLAN

SHEET
C1.01



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WAUWATOSA, WI
PROFESSIONAL ENGINEER

TRIO
DESIGN • LAND SURVEYING
CIVIL ENGINEERING
4100 N. CALHOUN RD., SUITE 300
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PHONE: (262) 790-1480
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EMAIL: jpudelko@trioeng.com

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21-071-953

DESCRIPTION:
GRADING & DRAINAGE PLAN

SHEET
C1.02

0 20 40 80
SCALE: 1" = 40' (22"X34")
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JOSHUA D. PUDELKO
E-39920
WAUWATOSA, WI
PROFESSIONAL ENGINEER

DESIGN • LAND SURVEYING
TRIO
CIVIL ENGINEERING

4100 N. CALHOUN RD., SUITE 300
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: jpudelko@trioeng.com

PROJECT:
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TOWN OF DELAFIELD, WISCONSIN
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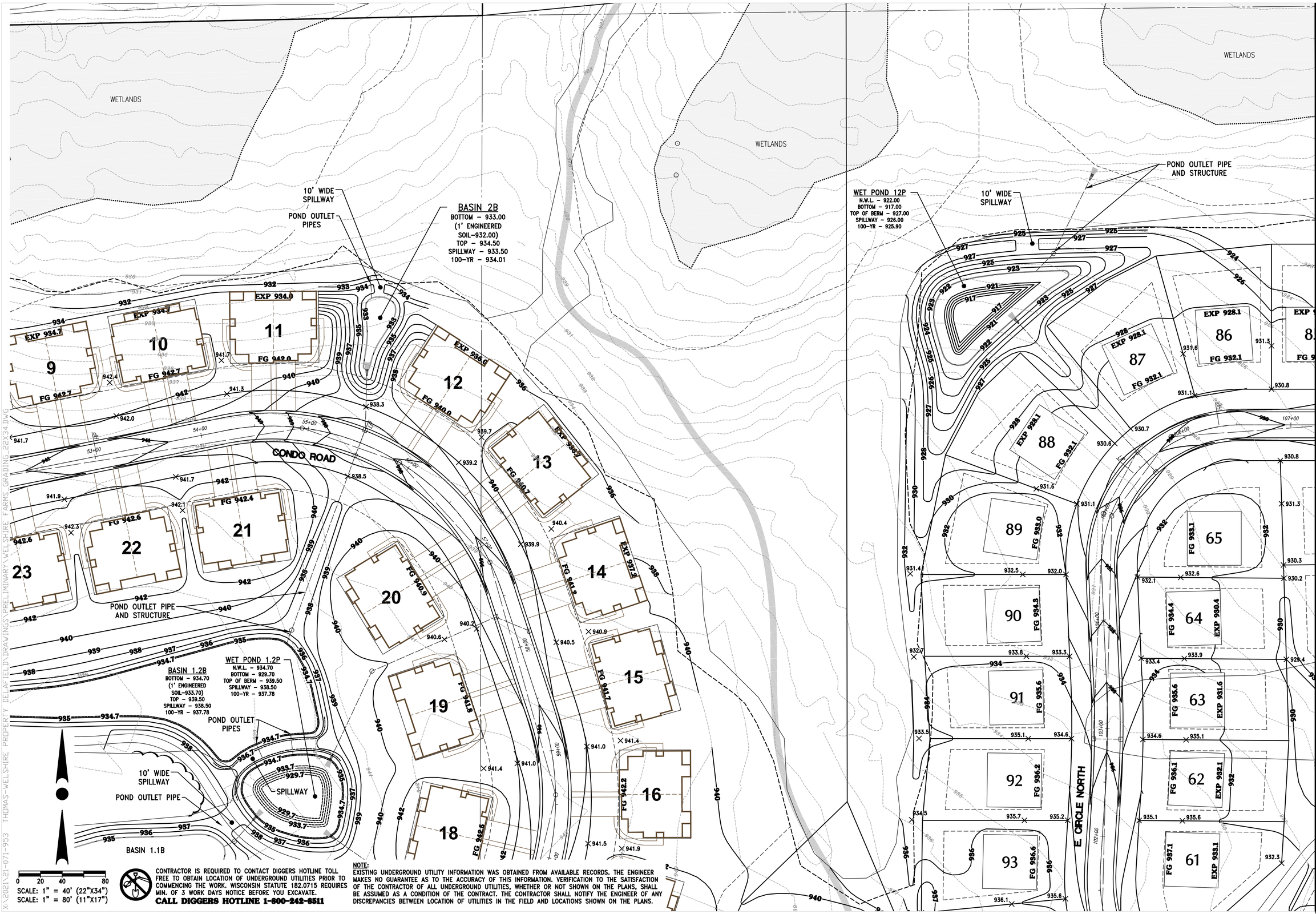
GRADING & DRAINAGE PLAN

SHEET
C1.03



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E-39620
WAUWATOSA, WI
PROFESSIONAL ENGINEER
WISCONSIN

TRIO
DESIGN • LAND SURVEYING
CIVIL ENGINEERING

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PROJECT:
WELSHIRE FARM
TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

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DATE:
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21-071-953

DESCRIPTION:
GRADING & DRAINAGE PLAN

SHEET
C1.04

CONTRACTOR IS REQUIRED TO CONTACT DIGGERS HOTLINE TOLL FREE TO OBTAIN LOCATION OF UNDERGROUND UTILITIES PRIOR TO COMMENCING THE WORK. WISCONSIN STATUTE 182.0715 REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.
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E-39920
WAUWATOSA, WI
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DESIGN • LAND SURVEYING
TRIO
CIVIL ENGINEERING

4100 N. CALHOUN RD., SUITE 300
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SHEET
C1.05

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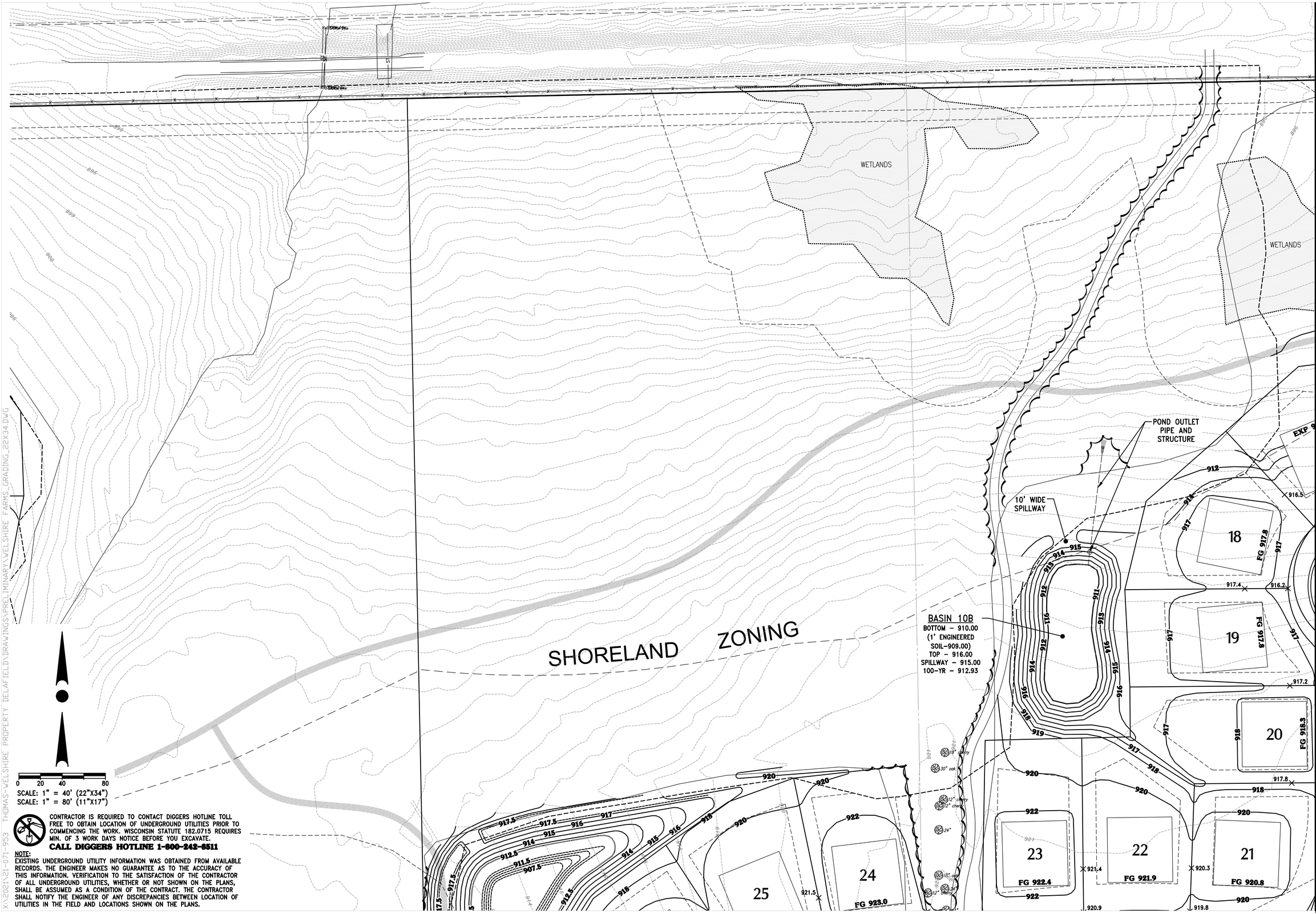

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21-071-953

DESCRIPTION:
GRADING & DRAINAGE PLAN

SHEET
C1.07

SHORELAND ZONI

WET POND 11P
N.W.L. – 912.50
BOTTOM – 907.50
TOP OF BERM – 917.50
SPILLWAY – 916.50
100-YR – 916.48

10' WIDE SPILLWAY

POND OUTLET PIPE AND STRUCTURE

WETLANDS

E. CIRCLE NORTH

E. CIRCLE NORTH

BASIN 8B
BOTTOM – 915.50
(1' ENGINEERED SOIL-914.50)
TOP – 920.80
SPILLWAY – 919.80
100-YR – 918.65

POND OUTLET PIPE AND STRUCTURE

0 20 40 80
SCALE: 1" = 40' (22"X34")
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SHEET
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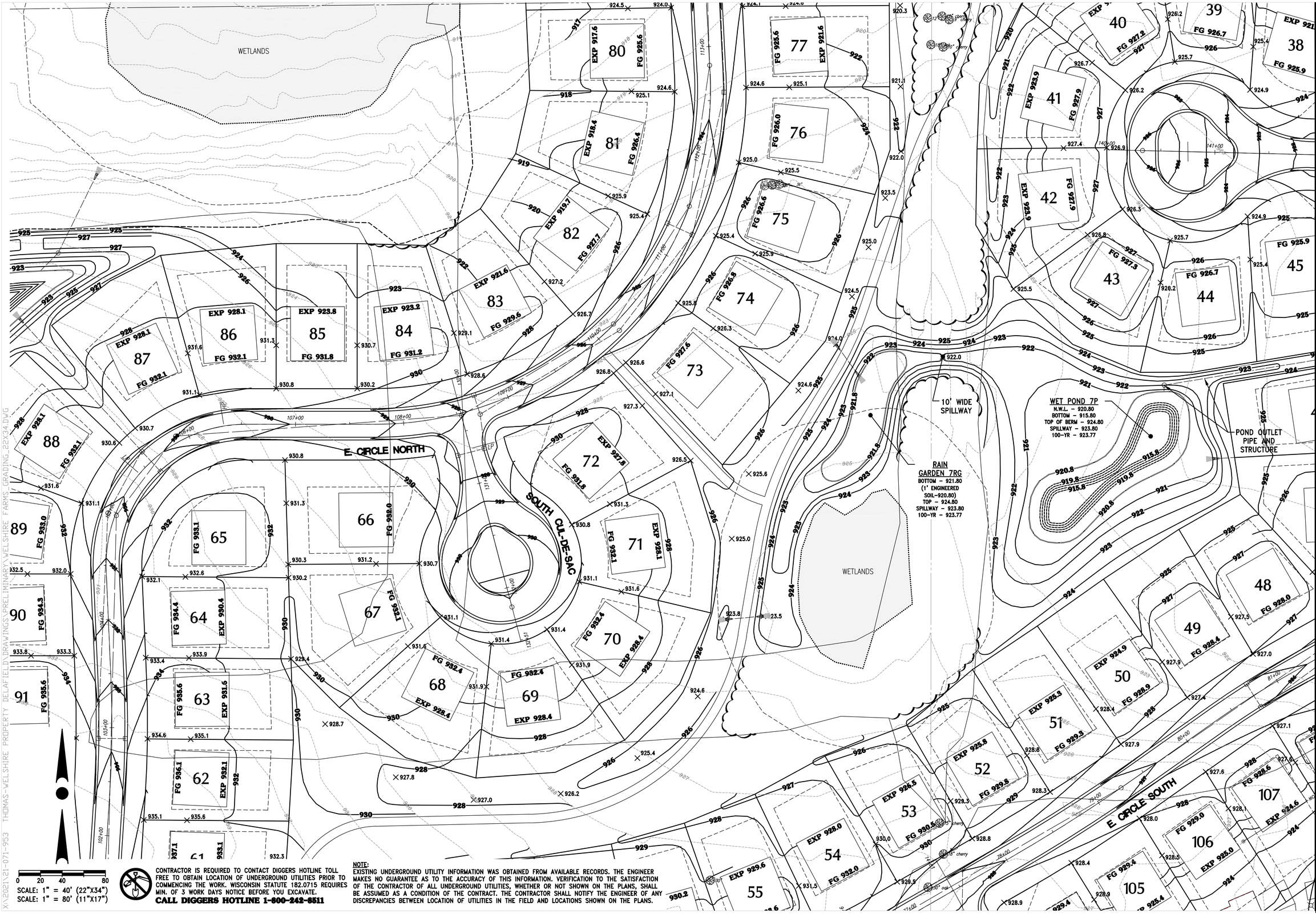

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SCALE: 1" = 80' (11"X17")

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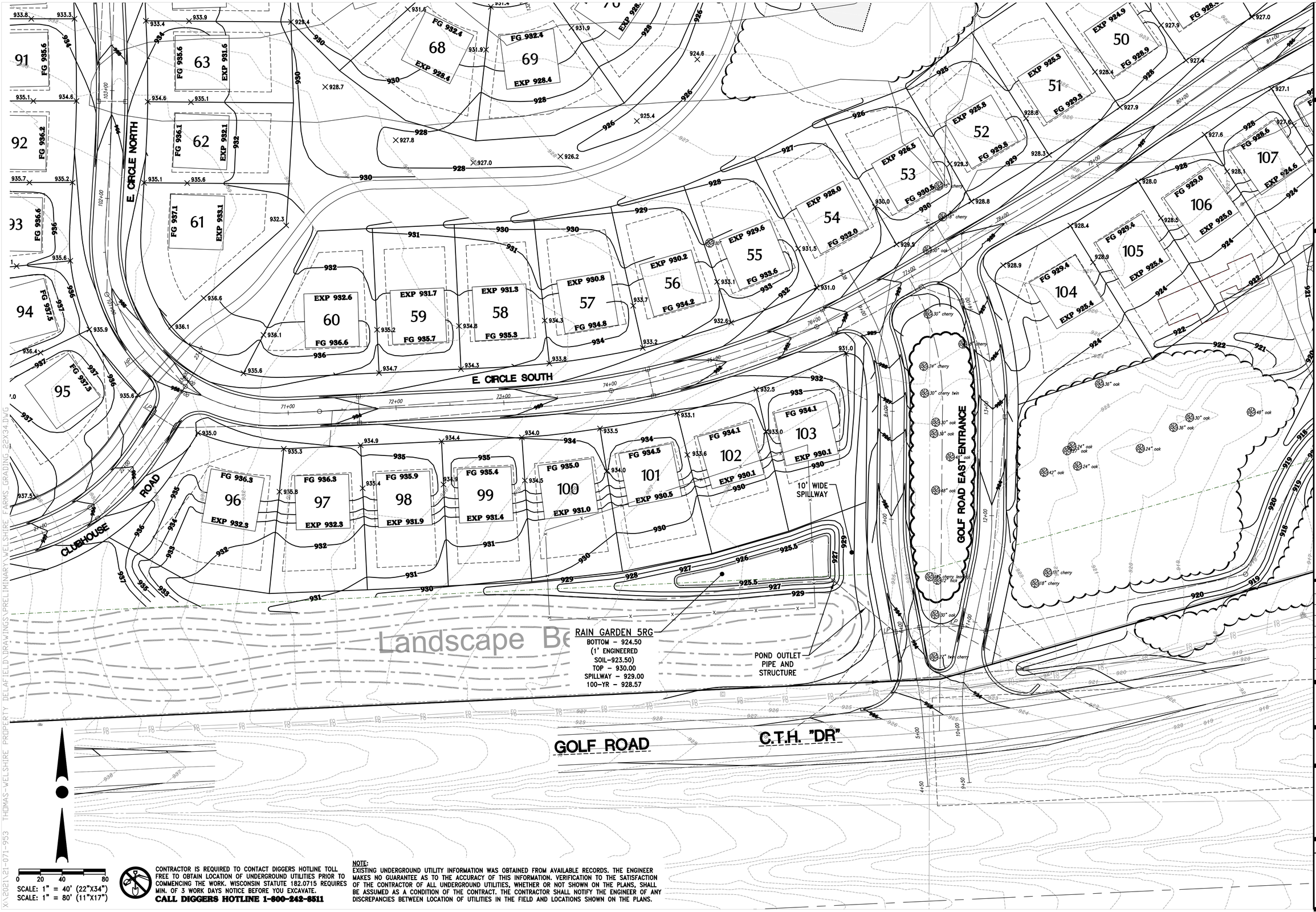
SHEET
C1.09



0 20 40 80

SCALE: 1" = 40' (22"X34")
SCALE: 1" = 80' (11"X17")

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WISCONSIN
JOSHUA D. DUDELKO
E-39020
WAUWATOSA, WI
PROFESSIONAL ENGINEER

DESIGN • LAND SURVEYING
TRIO
CIVIL ENGINEERING

4100 N. CALHOUN RD., SUITE 300
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: jpudelko@trioeng.com

PROJECT:
WELSHIRE FARM

TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

REVISION HISTORY

DATE	DESCRIPTION
04/09/2024	PRELIMINARY SUBMITTAL

DATE:
APRIL 9, 2024

JOB NUMBER:
21-071-953

DESCRIPTION:
GRADING & DRAINAGE PLAN

SHEET
C1.10

X:\2021\21-071-953 THOMAS-WELSHIRE PROPERTY DELAFIELD\DRAWINGS\PRELIMINARY\WELSHIRE FARMS_GRADING 22X34.DWG

POND OUTLET PIPE AND STRUCTURE

WETLANDS

WETLANDS

10' WIDE SPILLWAY

WET POND 9P
N.W.L. – 898.00
BOTTOM – 893.00
TOP OF BERM – 904.00
SPILLWAY – 903.00
100-YR – 902.97

ELMHURST ROAD

POND OUTLET PIPE AND STRUCTURE

10' WIDE SPILLWAY

BASIN 10B
BOTTOM – 910.00
(1' ENGINEERED SOIL–909.00)
TOP – 916.00
SPILLWAY – 915.00
100-YR – 912.93

NORTH CUL-DE-SAC

Type Buffer

17 FG 917.2 EXP 908.2

16 FG 917.2 EXP 908.2

18 FG 917.8

19 FG 917.8

20 FG 918.3

15 FG 917.0

14 FG 918.0

13 FG 918.5

12 FG 918.9

23 FG 922.4

22 FG 921.9

21 FG 920.8

24 FG 923.0

0 20 40 80
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JOSHUA D. PUDELKO
E-39920
WAUWATOSA, WI
PROFESSIONAL ENGINEER

TRIO
DESIGN • LAND SURVEYING
CIVIL ENGINEERING

4100 N. CALHOUN RD., SUITE 300
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
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PROJECT:
WELSHIRE FARM
TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

REVISION HISTORY

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DATE:
APRIL 9, 2024

JOB NUMBER:
21-071-953

DESCRIPTION:
GRADING & DRAINAGE PLAN

SHEET
C1.11

X:\2021\21-071-953 THOMAS-WELSHIRE PROPERTY DELAFIELD\DRAWINGS\PRELIMINARY\WELSHIRE FARMS_GRADING_22X34.DWG

JOSHUA D. PUDELKO
E-39920
WAUWATOSA, WI
WISCONSIN PROFESSIONAL ENGINEER

TRIO
DESIGN • LAND SURVEYING • CIVIL ENGINEERING
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PROJECT:
WELSHIRE FARMS
TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

REVISION HISTORY

DATE	DESCRIPTION
04/09/2024	PRELIMINARY SUBMITTAL

DATE:
APRIL 9, 2024

JOB NUMBER:
21-071-953

DESCRIPTION:
GRADING & DRAINAGE PLAN

SHEET
C1.12

SCALE: 1" = 40' (22"X34")
SCALE: 1" = 80' (11"X17")

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X:\2021\21-071-953 THOMAS-WELSHIRE PROPERTY DELAFIELD\DRAWINGS\PRELIMINARY\WELSHIRE FARMS_GRADING_22X34.DWG

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DATE:
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JOB NUMBER:
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DESCRIPTION:
GRADING & DRAINAGE PLAN

SHEET
C1.13

X:\2021\21-071-953 THOMAS-WELSHIRE PROPERTY DELAFIELD\DRAWINGS\PRELIMINARY\WELSHIRE FARMS GRADING_22X34.DWG

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JOSHUA D. CUDELKO
E-39920
WAUWATOSA, WI
PROFESSIONAL ENGINEER

DESIGN • LAND SURVEYING
TRIO
CIVIL ENGINEERING
4100 N. CALHOUN RD., SUITE 300
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PROJECT:
WELSHIRE FARM
TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

REVISION HISTORY

DATE	DESCRIPTION
04/09/2024	PRELIMINARY SUBMITTAL

DATE:
APRIL 9, 2024

JOB NUMBER:
21-071-953

DESCRIPTION:
GRADING & DRAINAGE PLAN

SHEET
C1.14

0 75 150 300

SCALE: 1" = 150' (22"X34")
SCALE: 1" = 300' (11"X17")

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E-39620
WAUWATOSA, WI
PROFESSIONAL ENGINEER
WISCONSIN

DESIGN • LAND SURVEYING
TRIO
CIVIL ENGINEERING

4100 N. CALHOUN RD., SUITE 300
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PROJECT:
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TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

REVISION HISTORY

DATE	DESCRIPTION
04/09/2024	PRELIMINARY SUBMITTAL

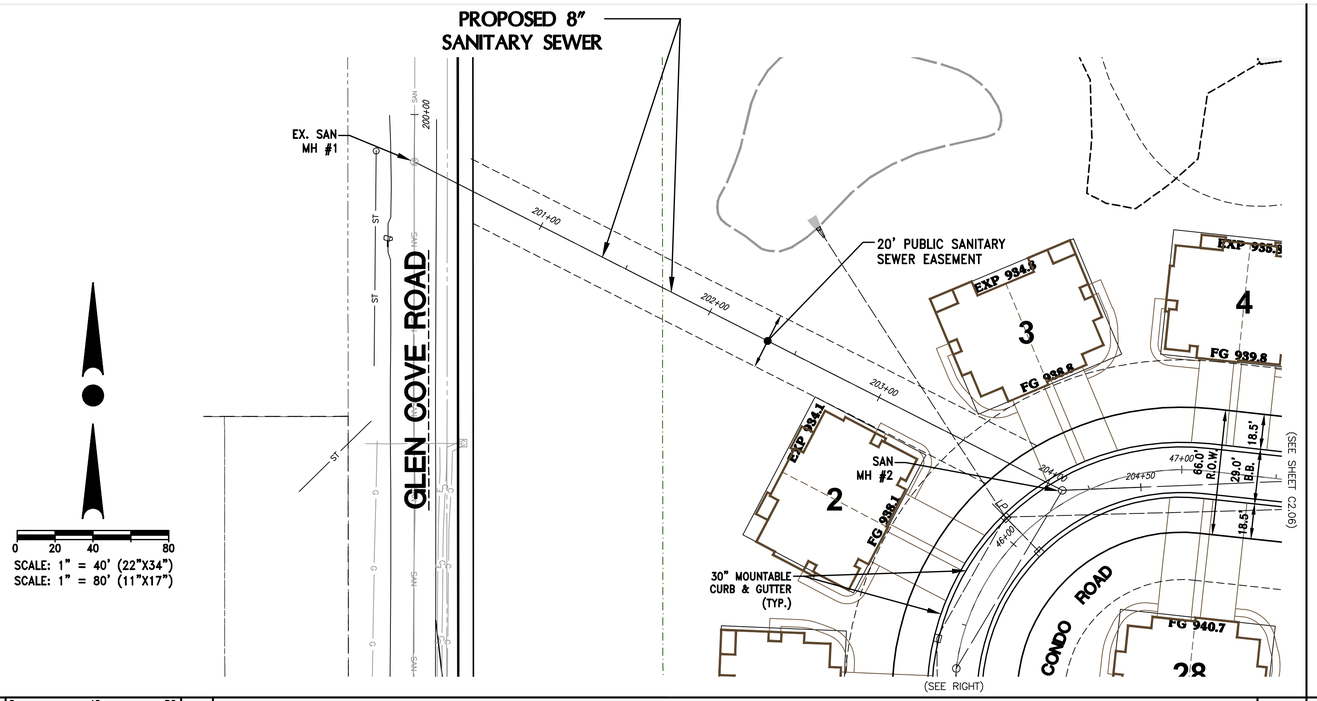
DATE:
APRIL 9, 2024

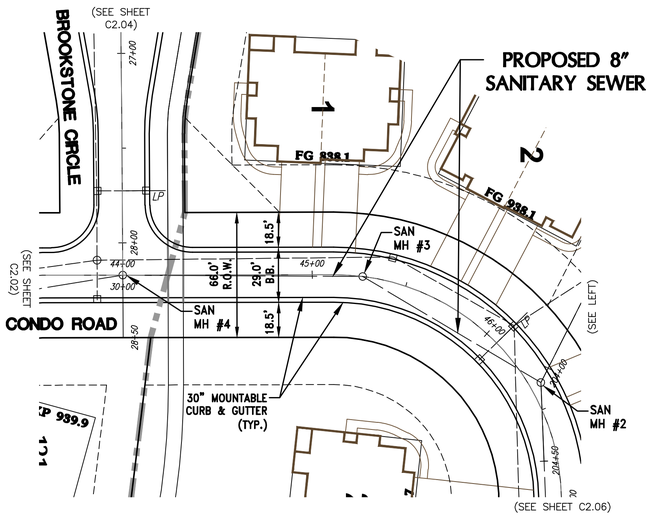
JOB NUMBER:
21-071-953

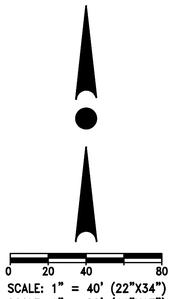
DESCRIPTION:
OVERALL ROADWAY & SANITARY SEWER PLAN

SHEET
C2.00

X:\2021\21-071-953 THOMAS-WELSHIRE PROPERTY DELAFIELD\DRAWINGS\PRELIMINARY\WELSHIRE FARMS_RD&SAN_22X34.DWG







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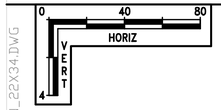
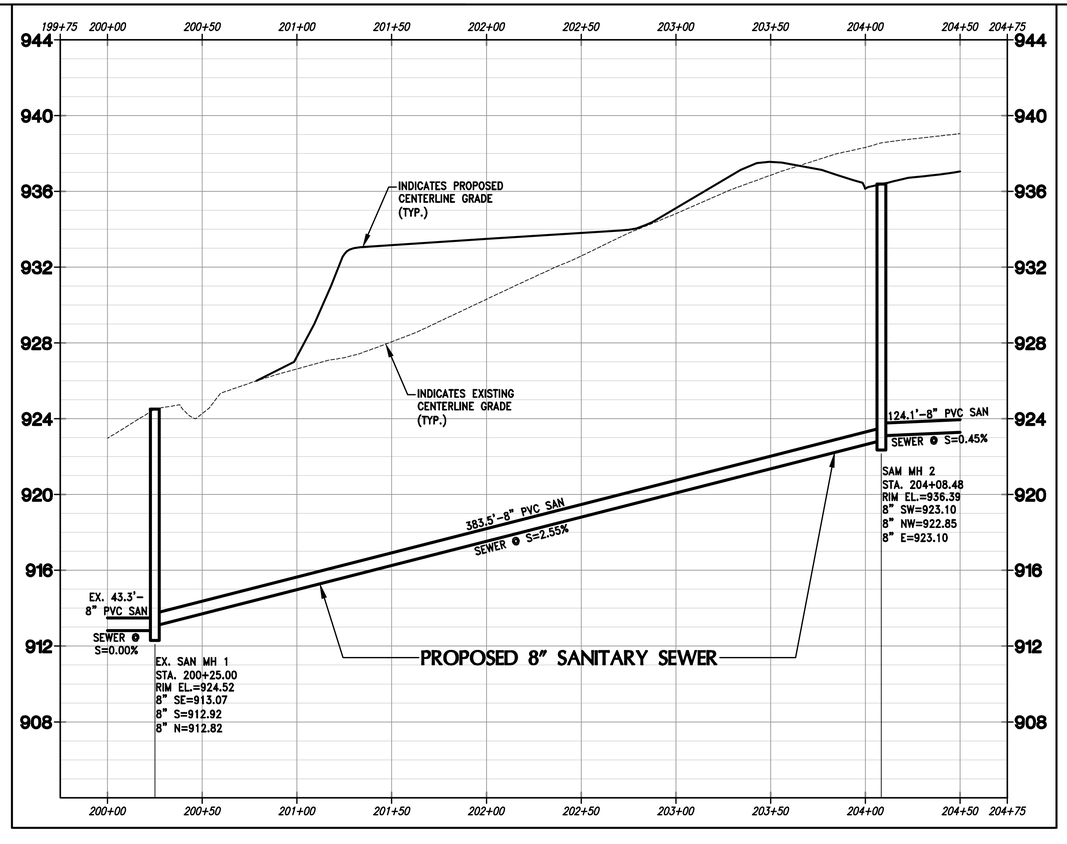
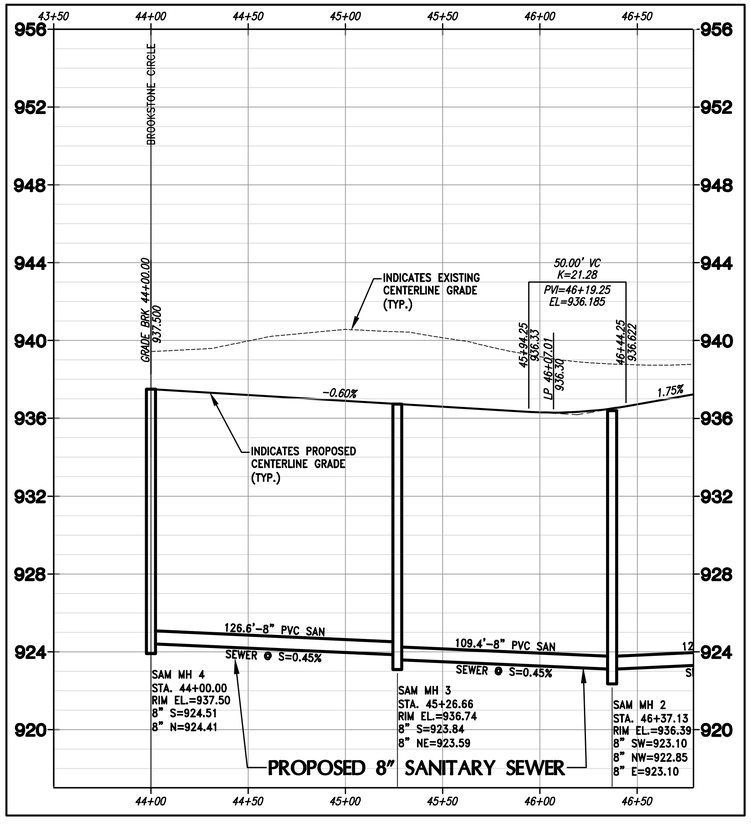






JOSHUA D. PUDELKO
E-39920
WAUWATOSA, WI
WISCONSIN PROFESSIONAL ENGINEER

TRIO
DESIGN • LAND SURVEYING
CIVIL ENGINEERING
4100 N. CALHOUN RD., SUITE 300
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: jpudelko@trioeng.com

PROJECT:
WELSHIRE FARM
TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

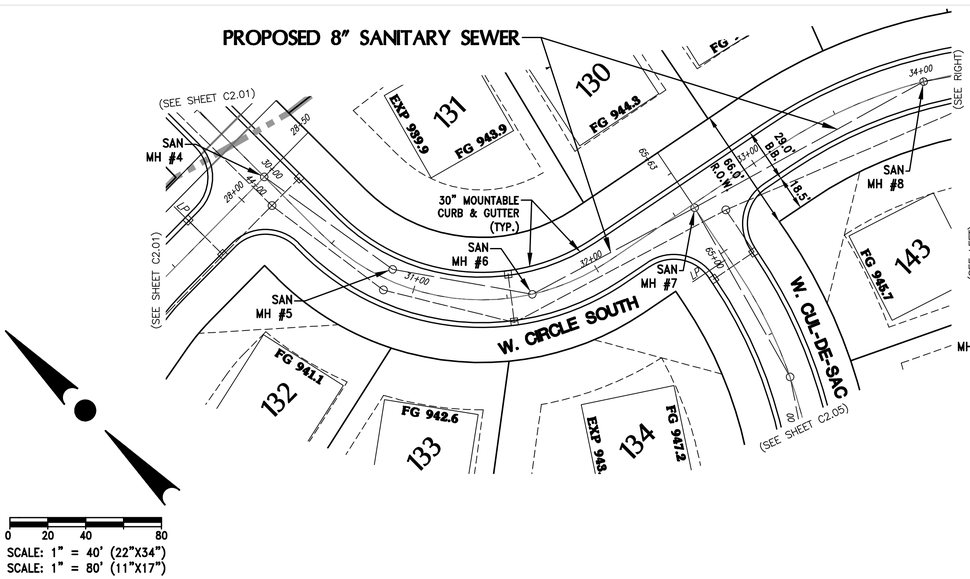
REVISION HISTORY	
DATE	DESCRIPTION
04/09/2024	PRELIMINARY SUBMITTAL

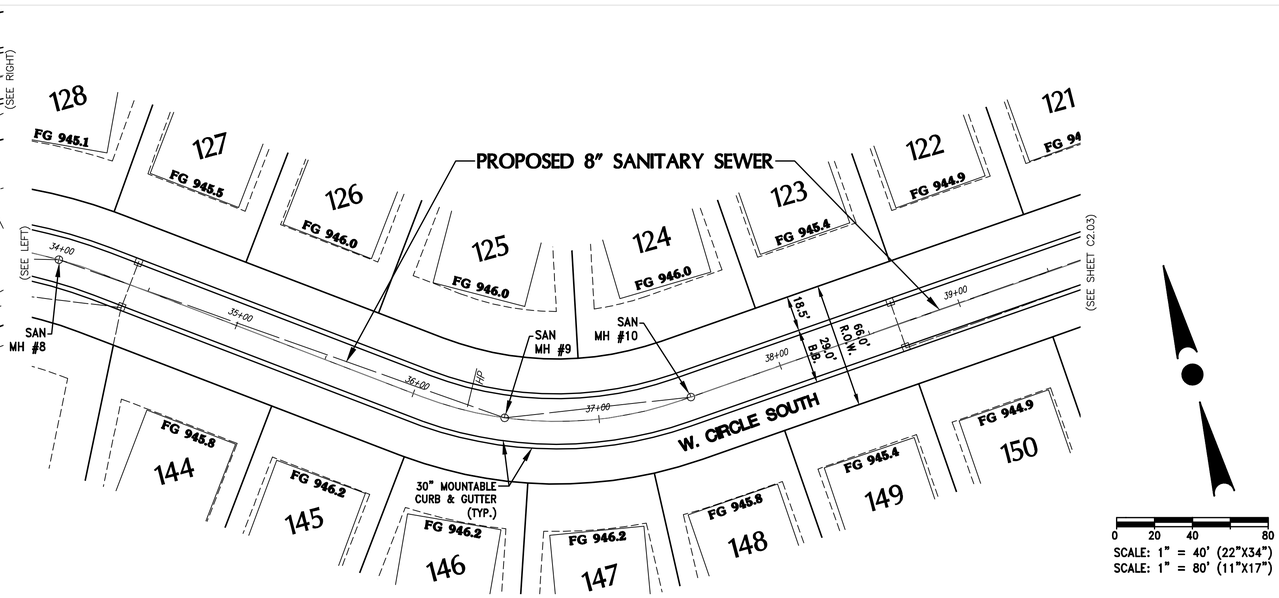
DATE:
APRIL 9, 2024

JOB NUMBER:
21-071-953

DESCRIPTION:
ROADWAY AND SANITARY SEWER PLAN & PROFILE

SHEET
C2.01





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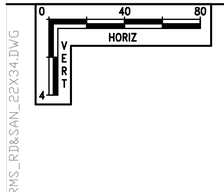

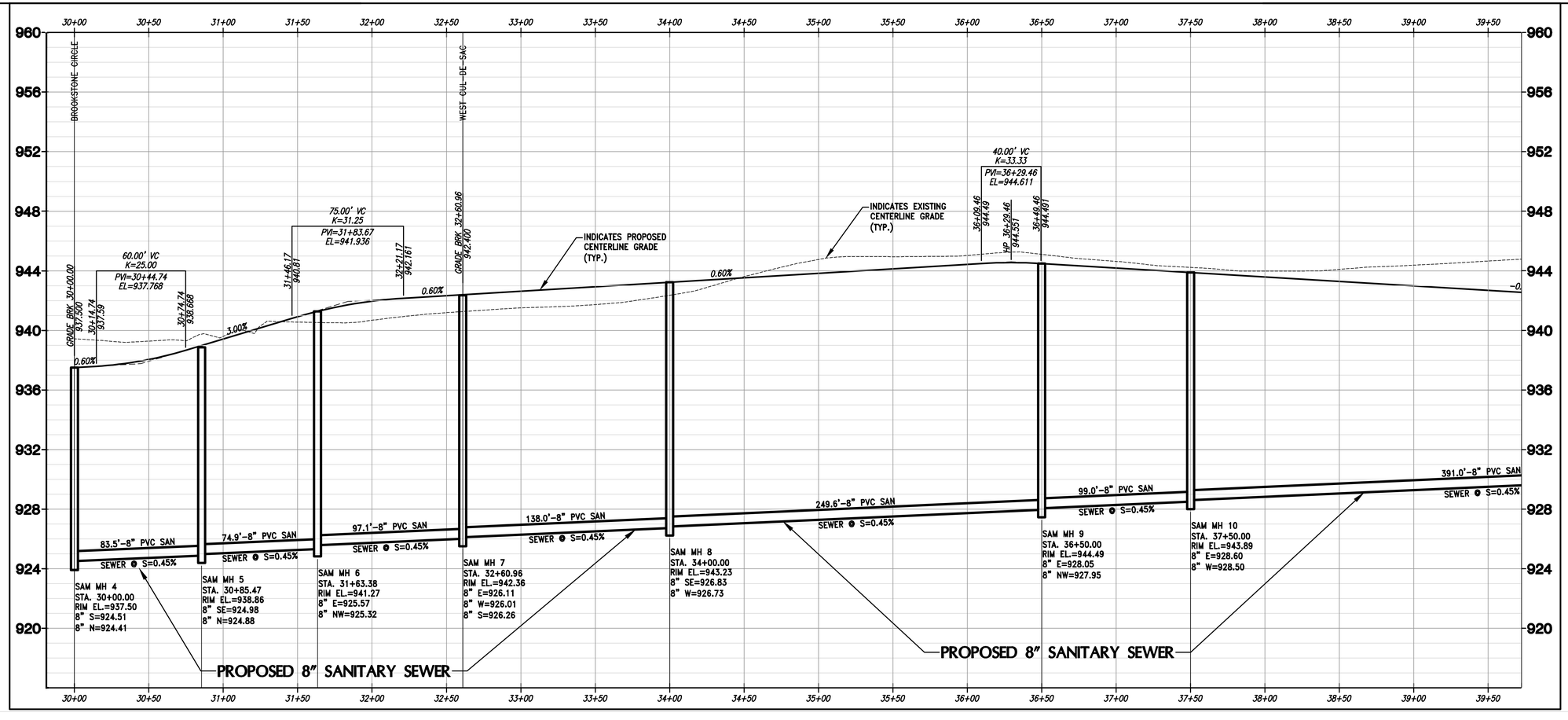

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E-39920
WAUWATOSA, WI
WISCONSIN PROFESSIONAL ENGINEER

TRIO
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PROJECT:
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TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

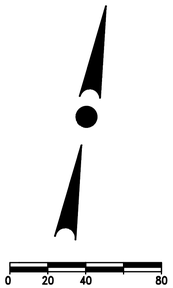
REVISION HISTORY	
DATE	DESCRIPTION
04/09/2024	PRELIMINARY SUBMITTAL

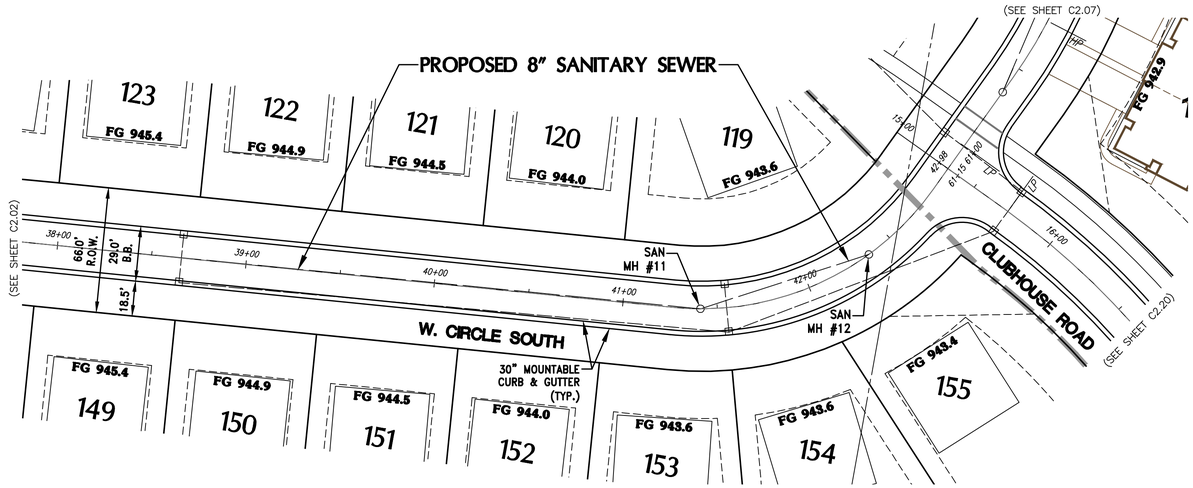
DATE:
APRIL 9, 2024

JOB NUMBER:
21-071-953

DESCRIPTION:
ROADWAY AND SANITARY SEWER PLAN & PROFILE

SHEET
C2.02





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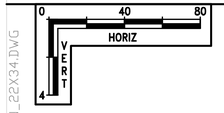

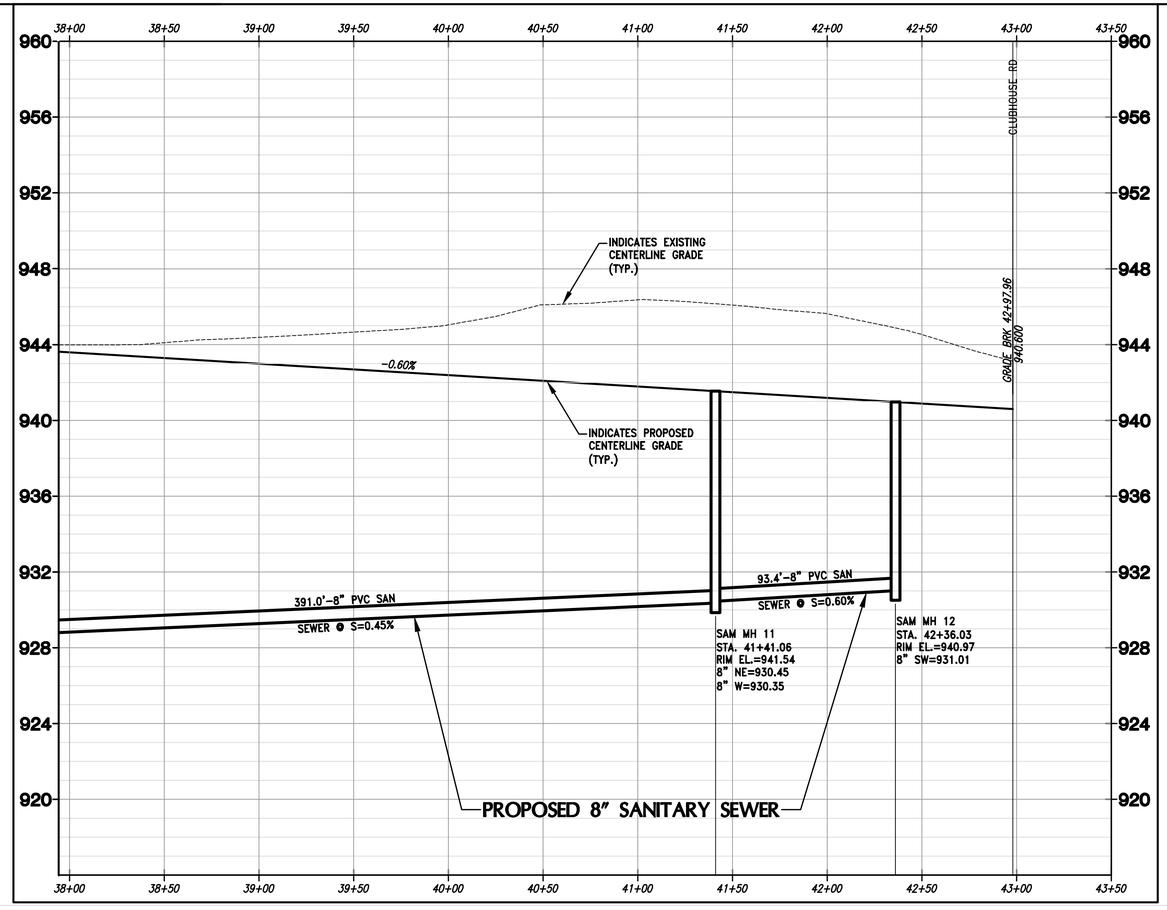

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E-39920
WAUWATOSA, WI
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WISCONSIN

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PROJECT:
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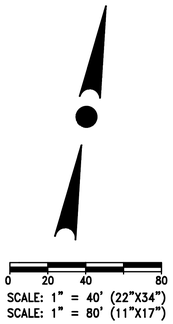
REVISION HISTORY	
DATE	DESCRIPTION
04/09/2024	PRELIMINARY SUBMITTAL

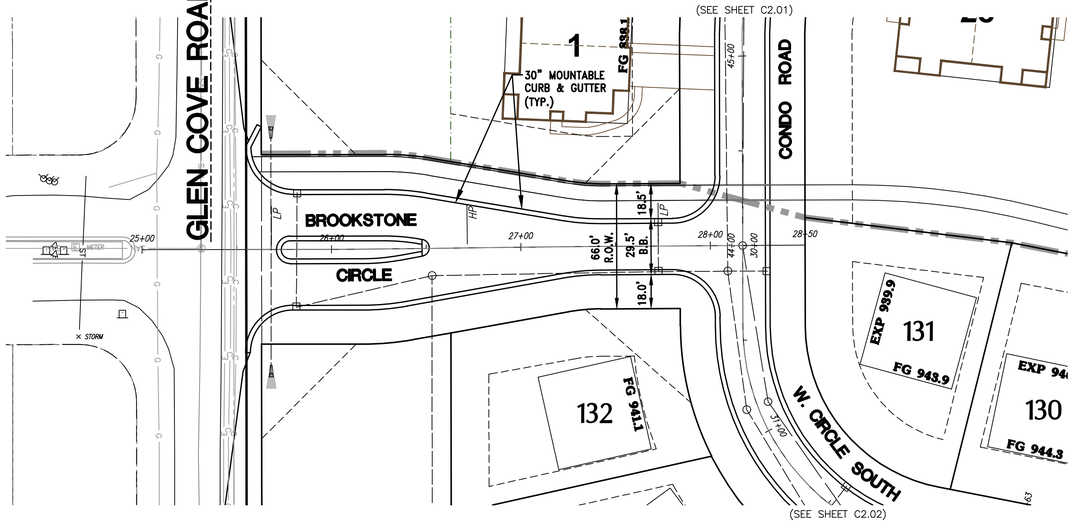
DATE:
APRIL 9, 2024

JOB NUMBER:
21-071-953

DESCRIPTION:
ROADWAY AND SANITARY SEWER PLAN & PROFILE

SHEET
C2.03





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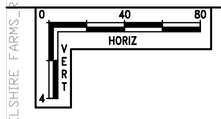

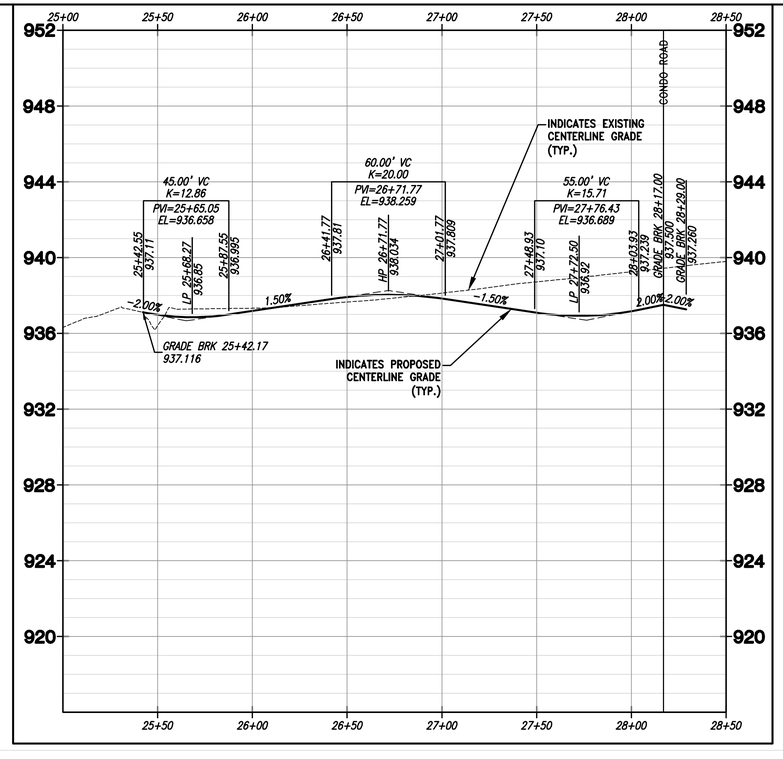

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PROFESSIONAL ENGINEER

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DESIGN • LAND SURVEYING
CIVIL ENGINEERING

4100 N. CALHOUN RD., SUITE 300
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: jpudelko@trioeng.com

PROJECT:
WELSHIRE FARM
TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

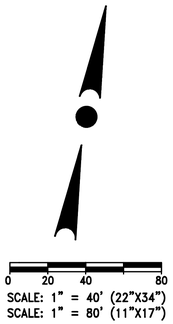
REVISION HISTORY	
DATE	DESCRIPTION
04/09/2024	PRELIMINARY SUBMITTAL

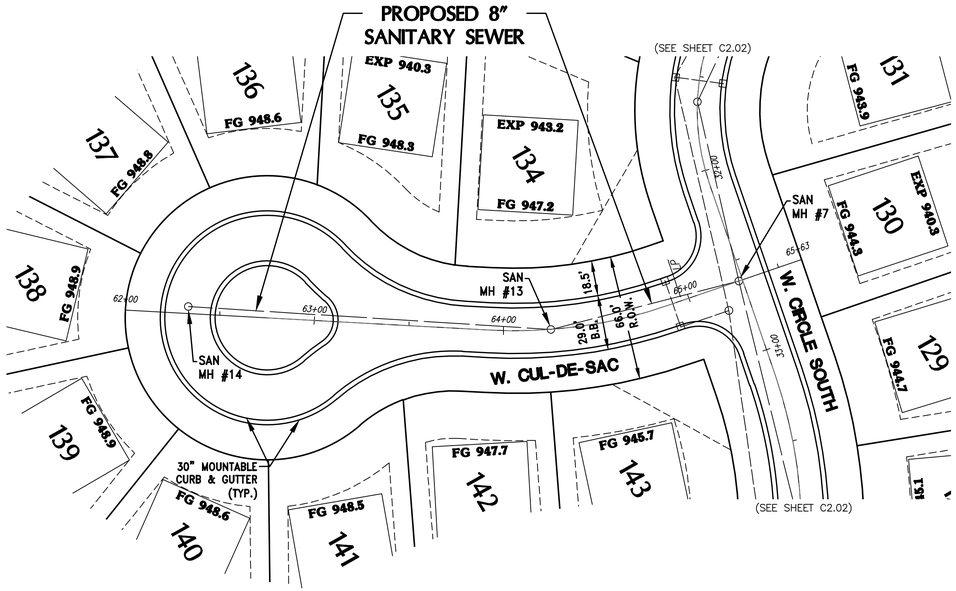
DATE:
APRIL 9, 2024

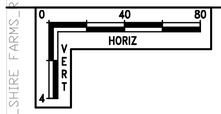
JOB NUMBER:
21-071-953

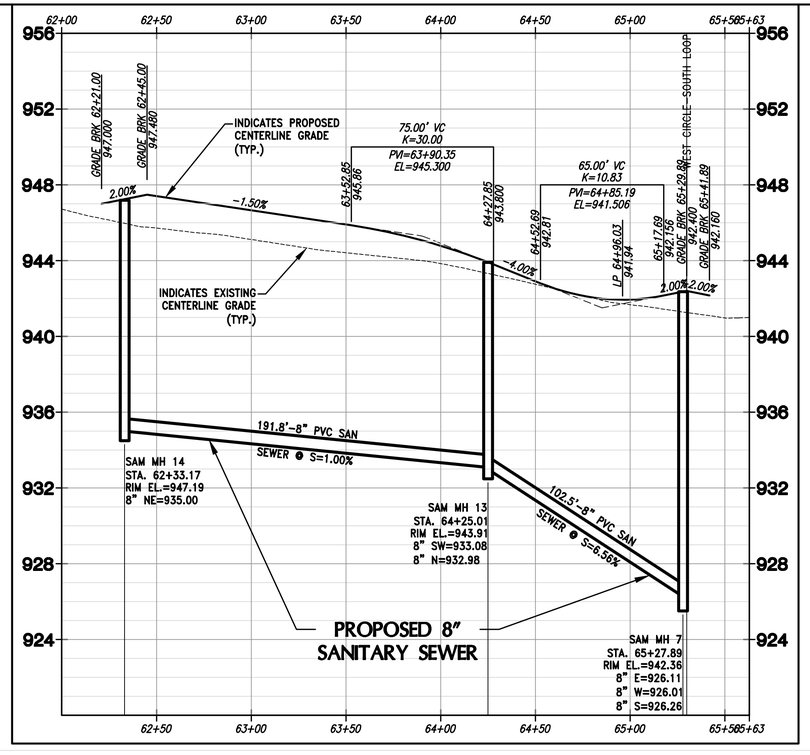
DESCRIPTION:
ROADWAY AND SANITARY SEWER PLAN & PROFILE

SHEET
C2.04









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E-39920
WAUWATOSA, WI
PROFESSIONAL ENGINEER

TRIO
DESIGN • LAND SURVEYING
CIVIL ENGINEERING
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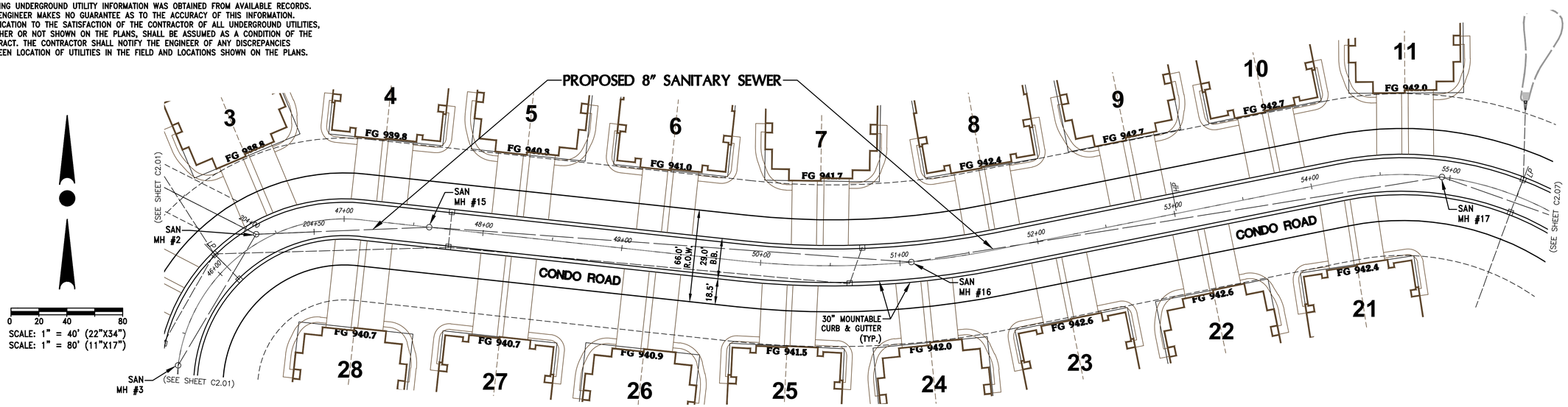

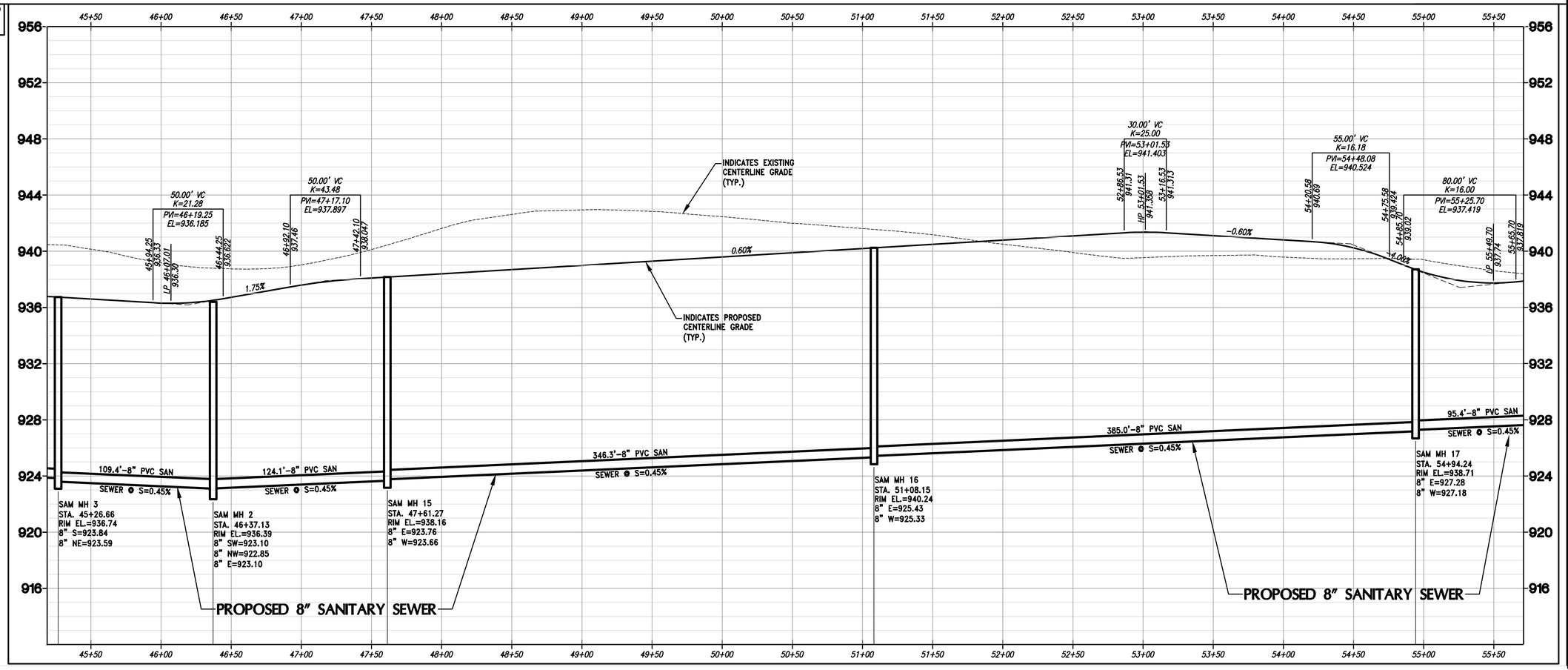

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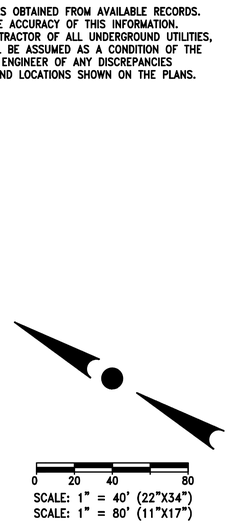

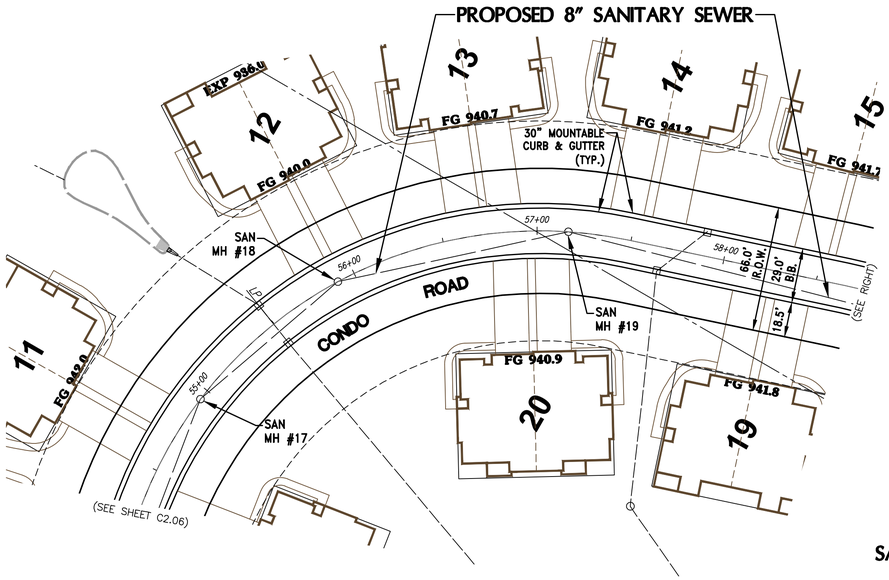

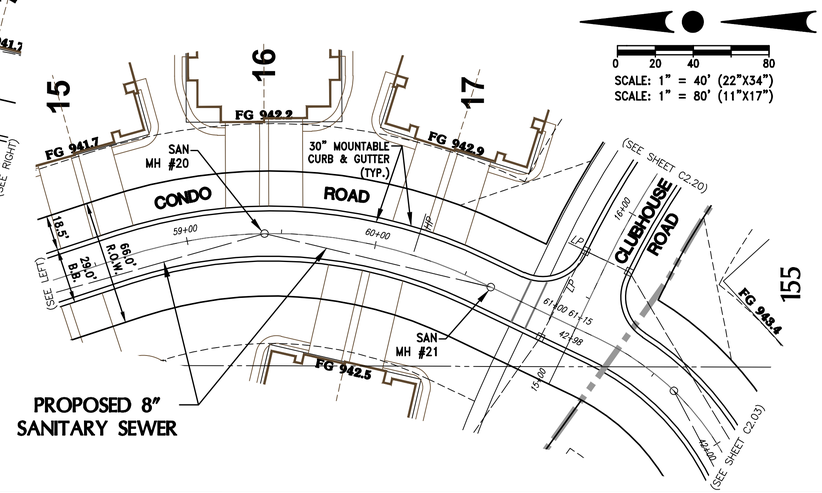

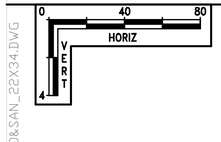

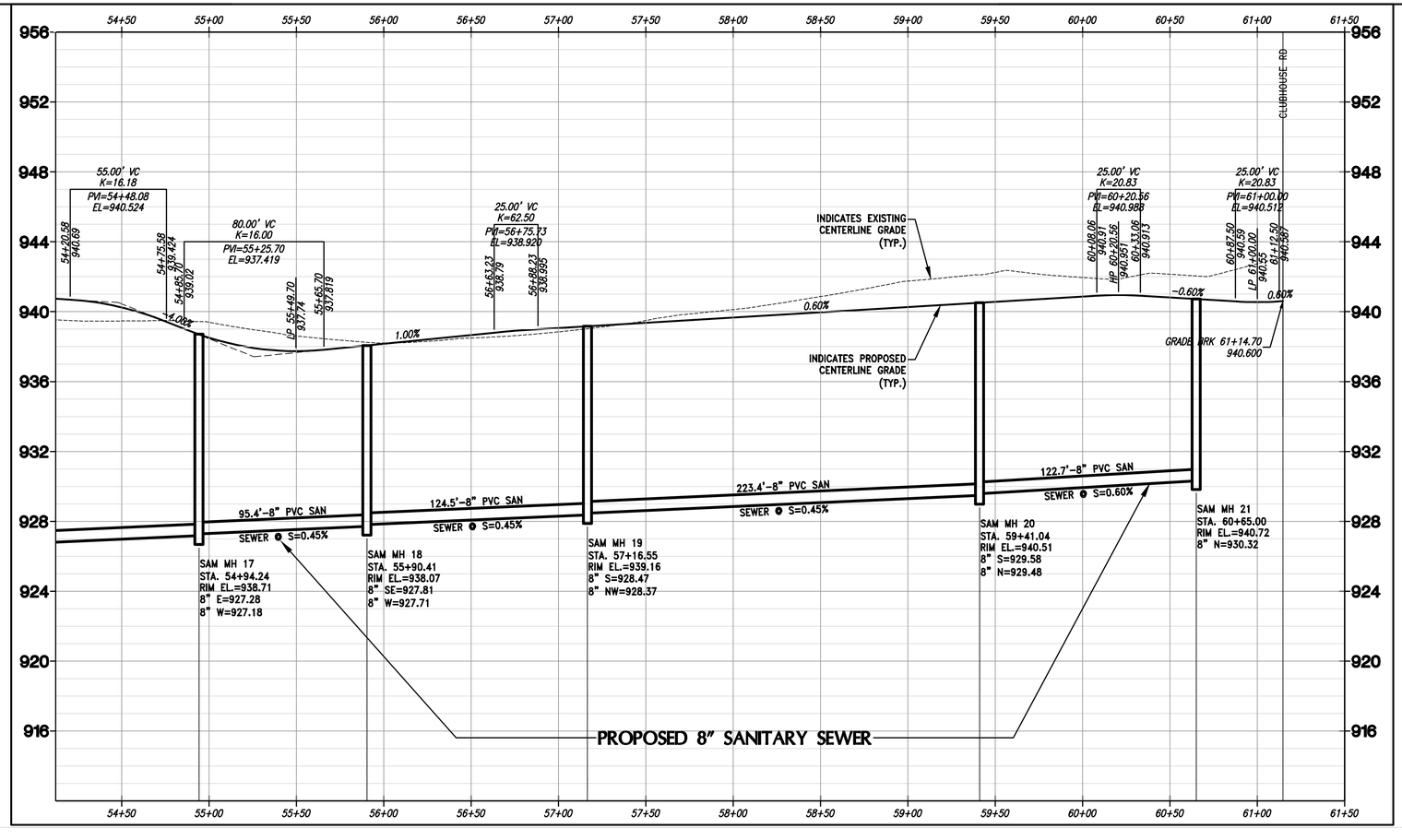

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WISCONSIN PROFESSIONAL ENGINEER

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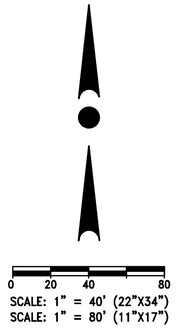

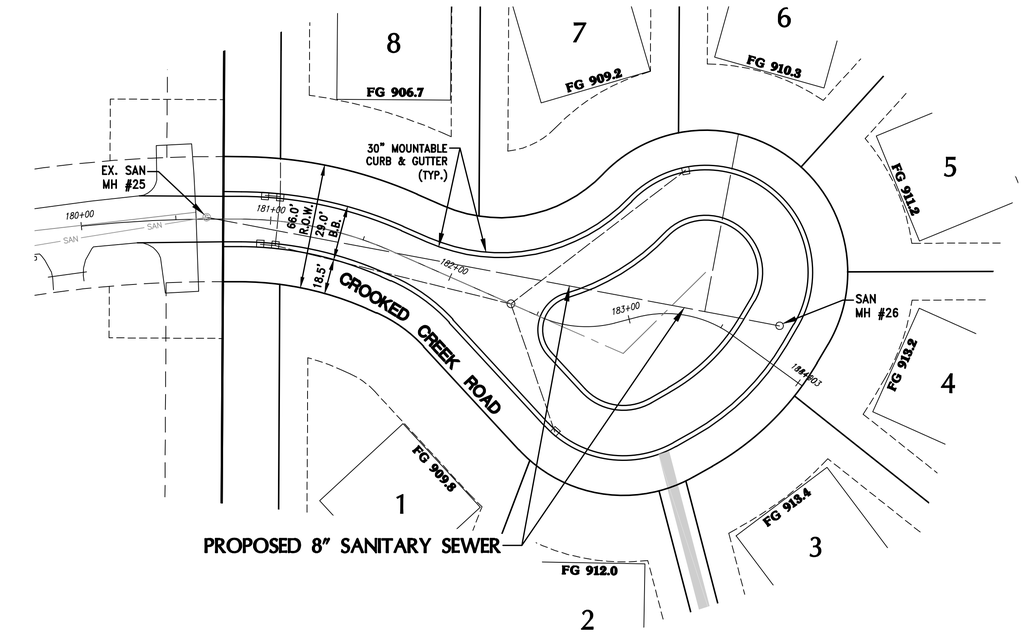

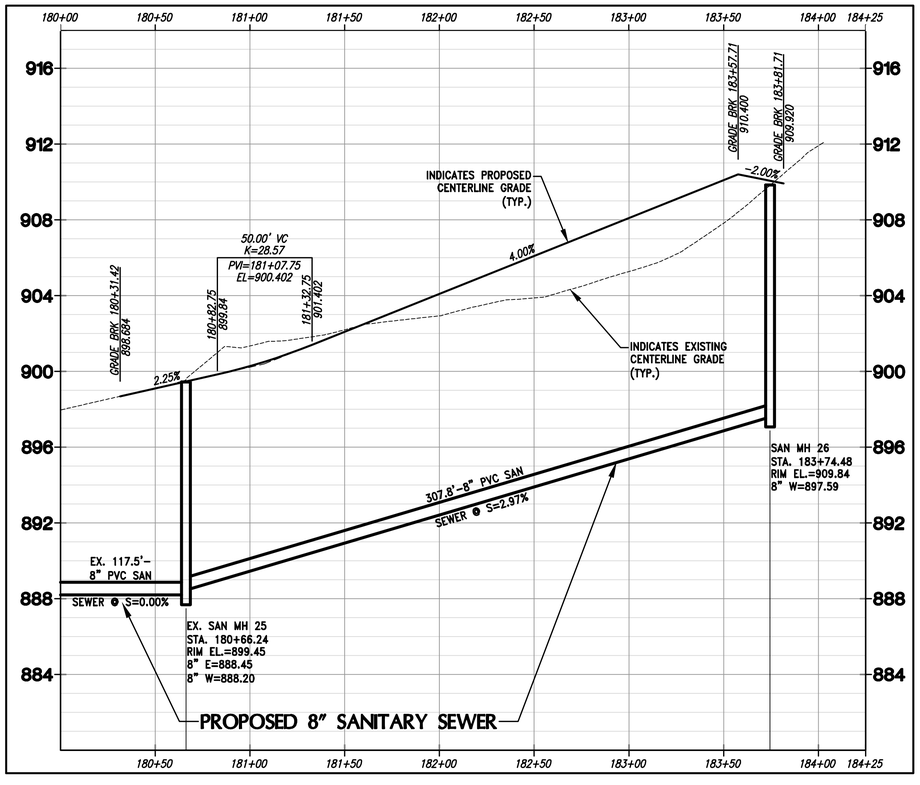

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WAUWATOSA, WI
PROFESSIONAL ENGINEER

DESIGN • LAND SURVEYING
TRIO
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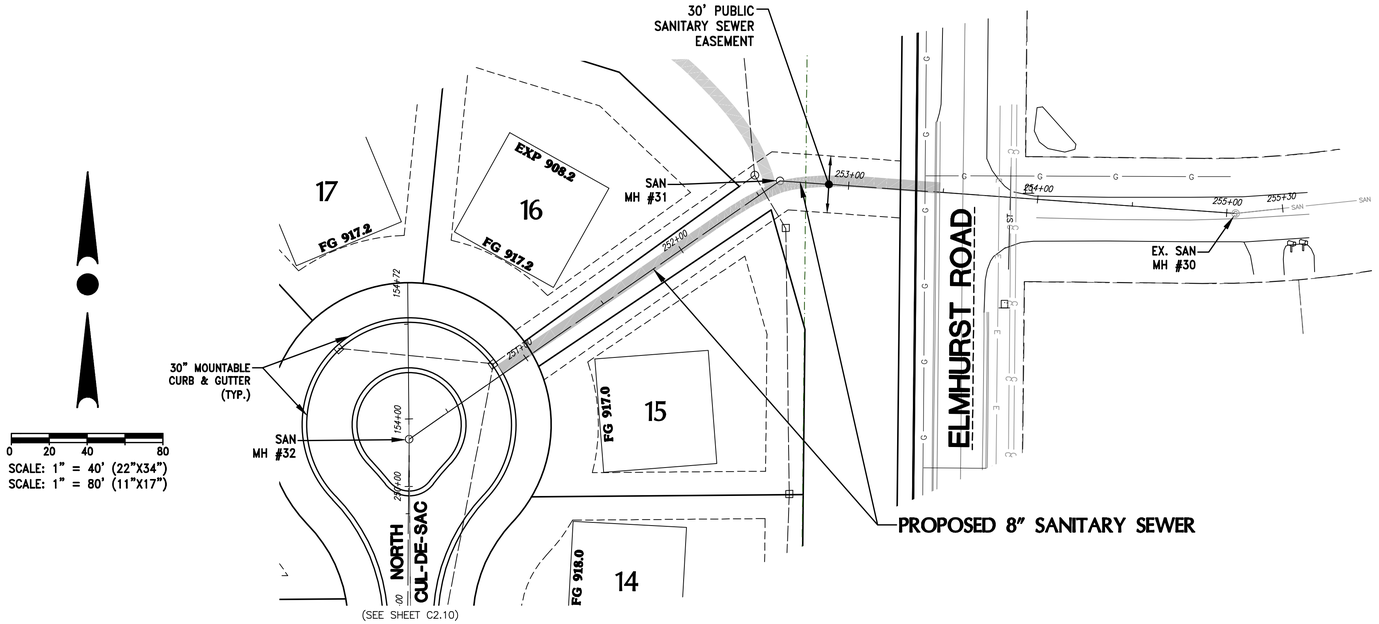

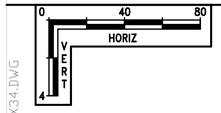

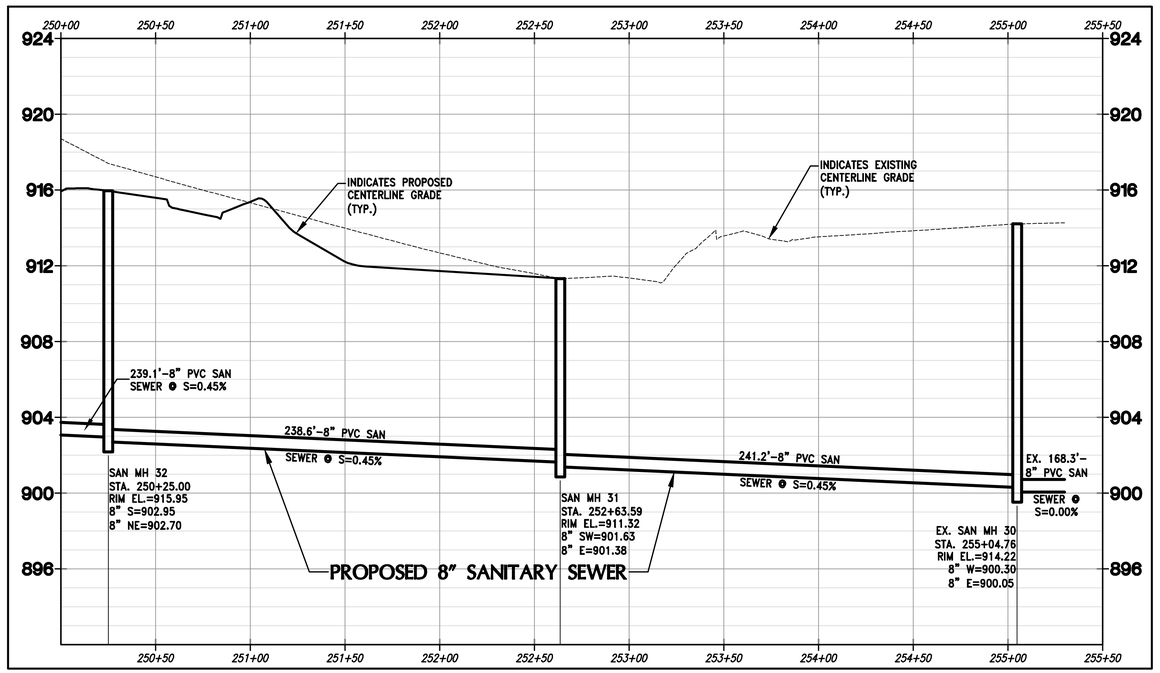

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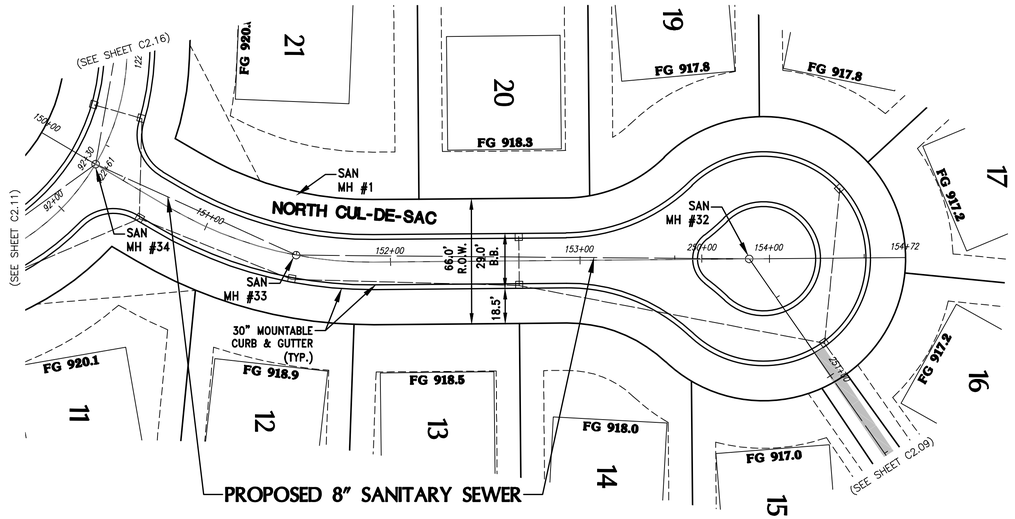

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SCALE: 1" = 80' (11"X17")

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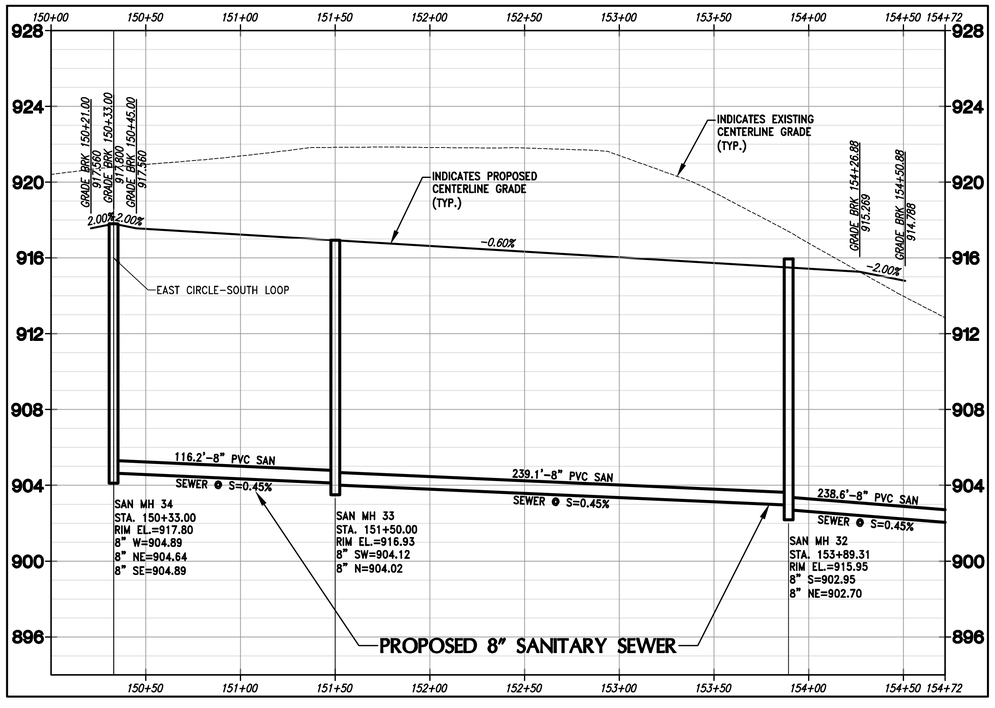

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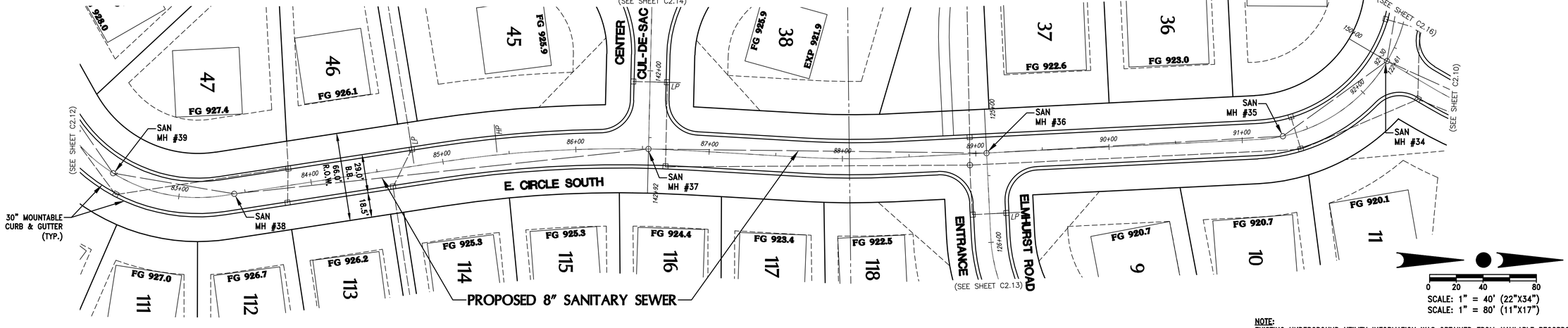

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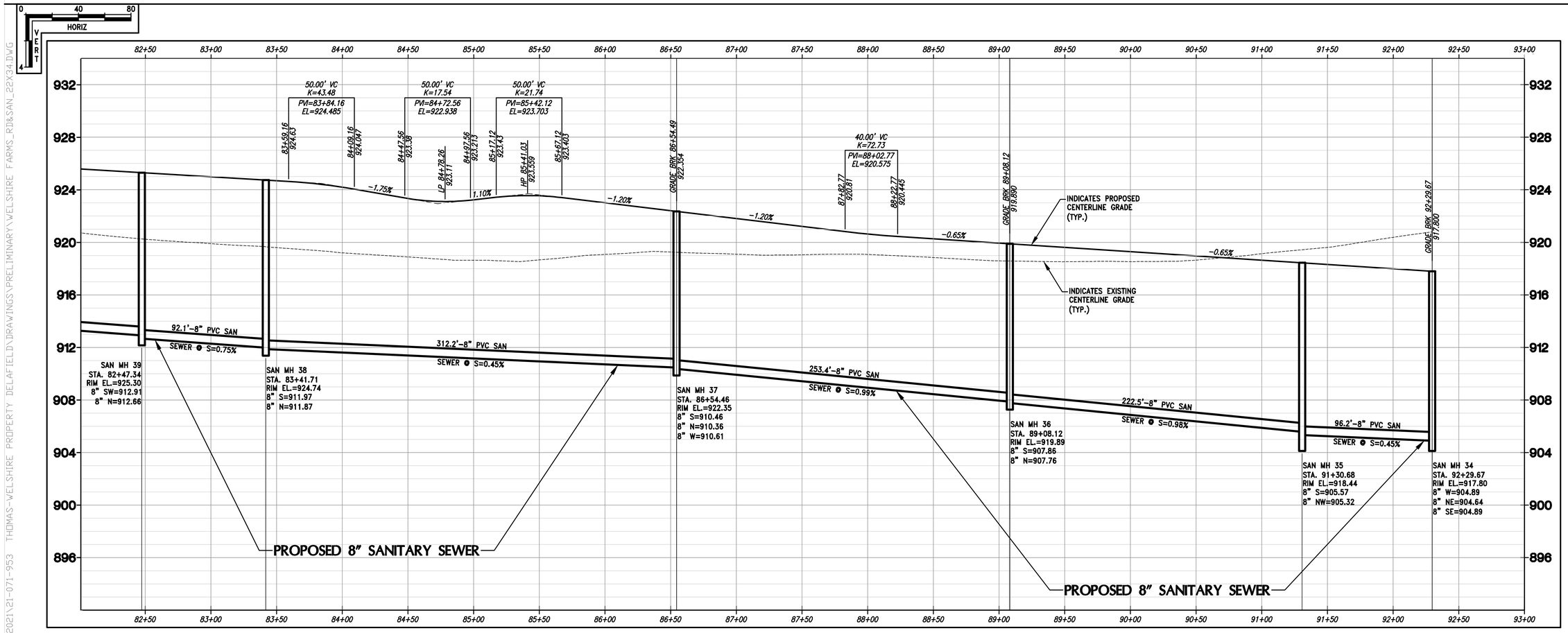

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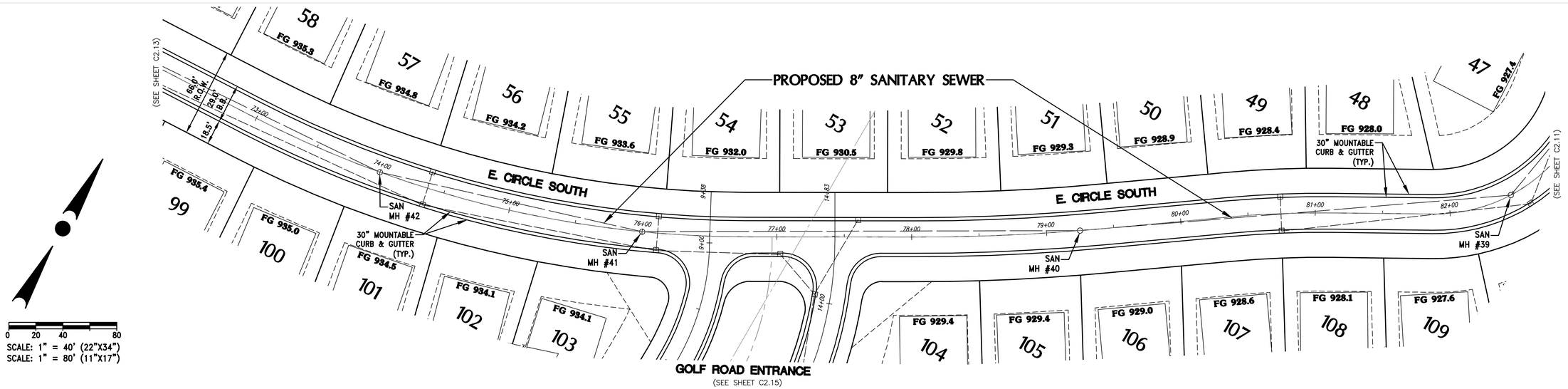

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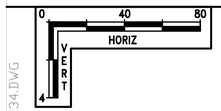

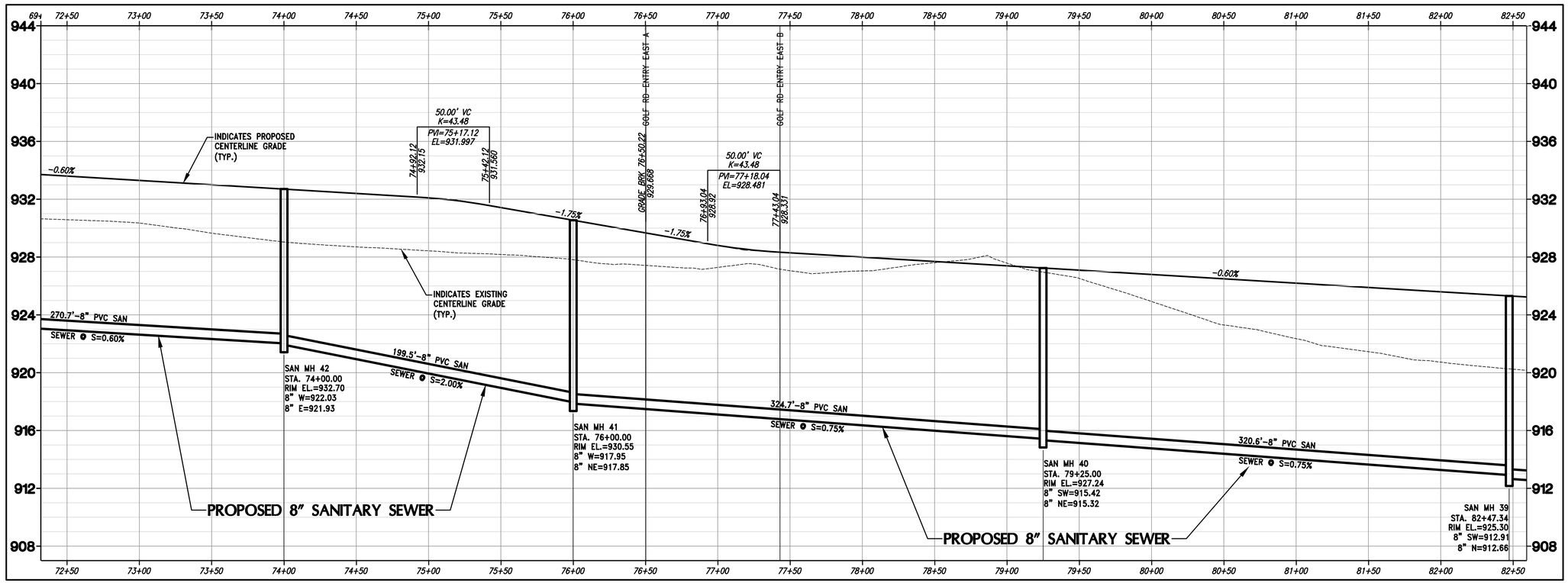

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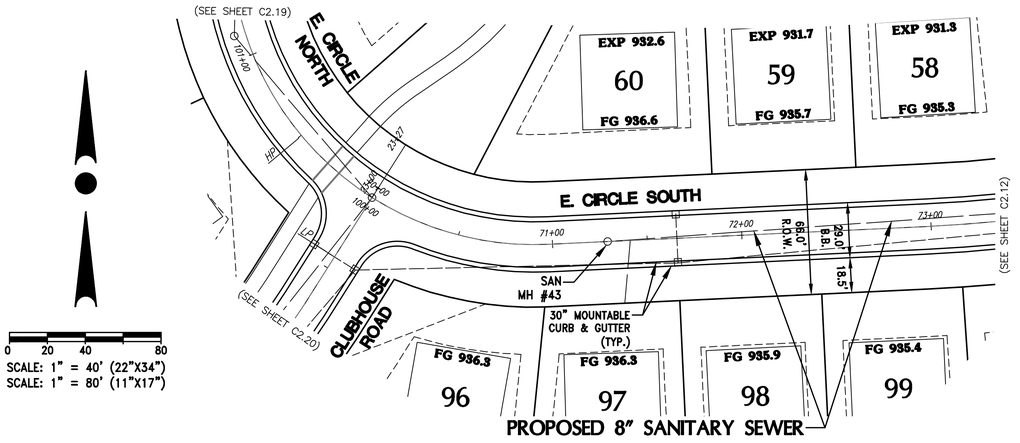

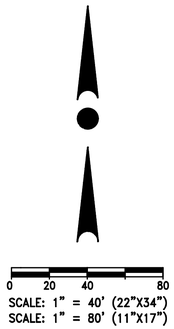

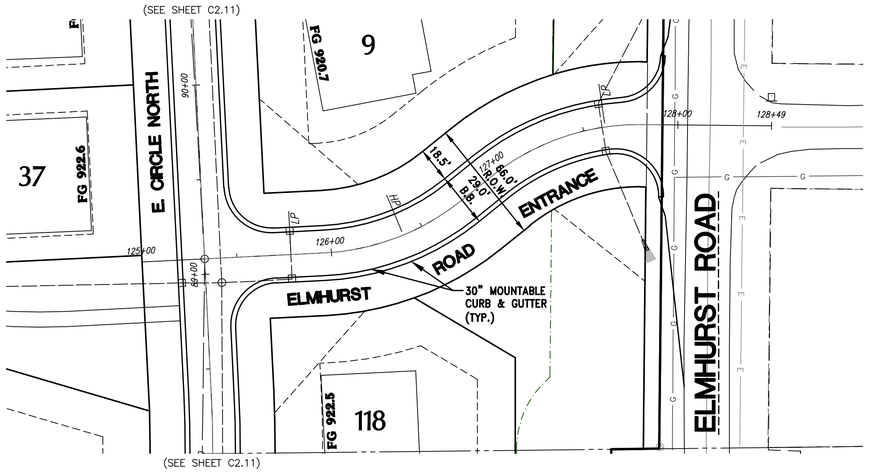

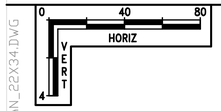

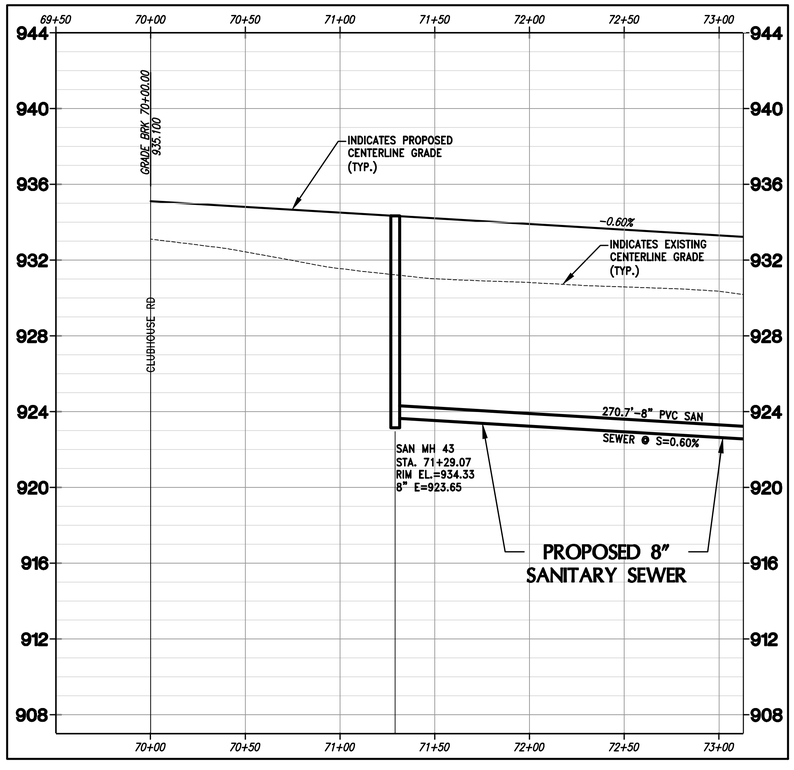

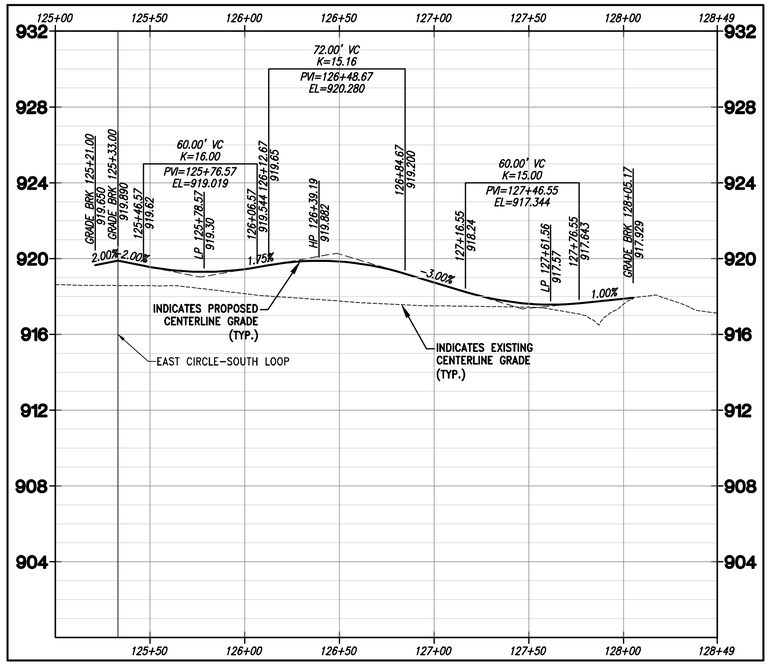

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JOSHUA D. PUDELKO
E-39920
WAUWATOSA, WI
PROFESSIONAL ENGINEER

DESIGN • LAND SURVEYING
TRIO
CIVIL ENGINEERING
4100 N. CALHOUN RD., SUITE 300
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: jpudelko@trioeng.com

PROJECT:
WELSHIRE FARM
TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

REVISION HISTORY

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DESCRIPTION:
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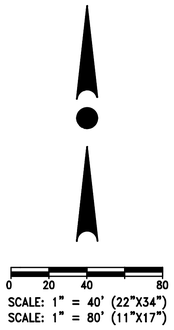
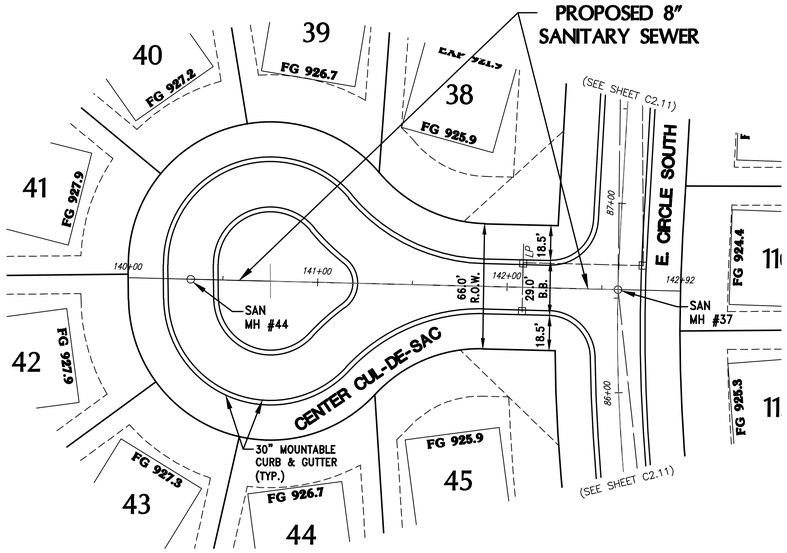
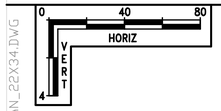
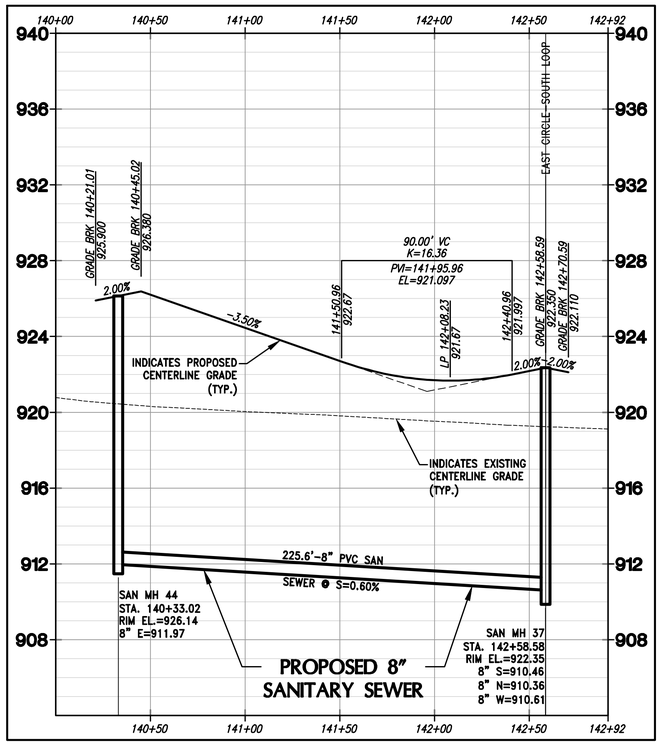
SHEET
C2.13









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E-39620
WAUWATOSA, WI
PROFESSIONAL ENGINEER

TRIO
DESIGN • LAND SURVEYING
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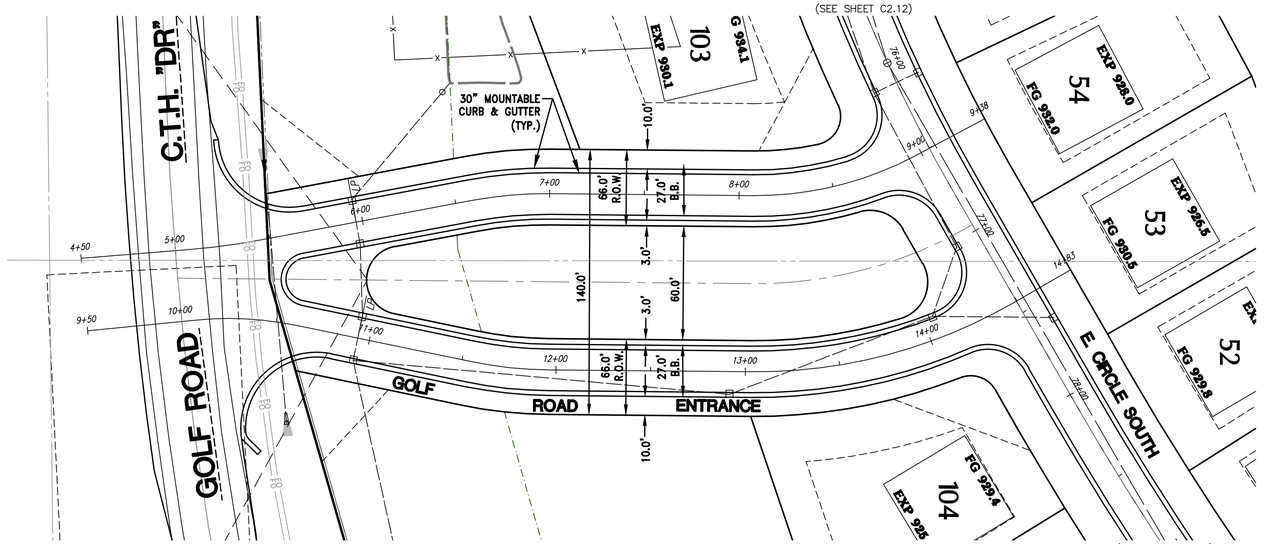

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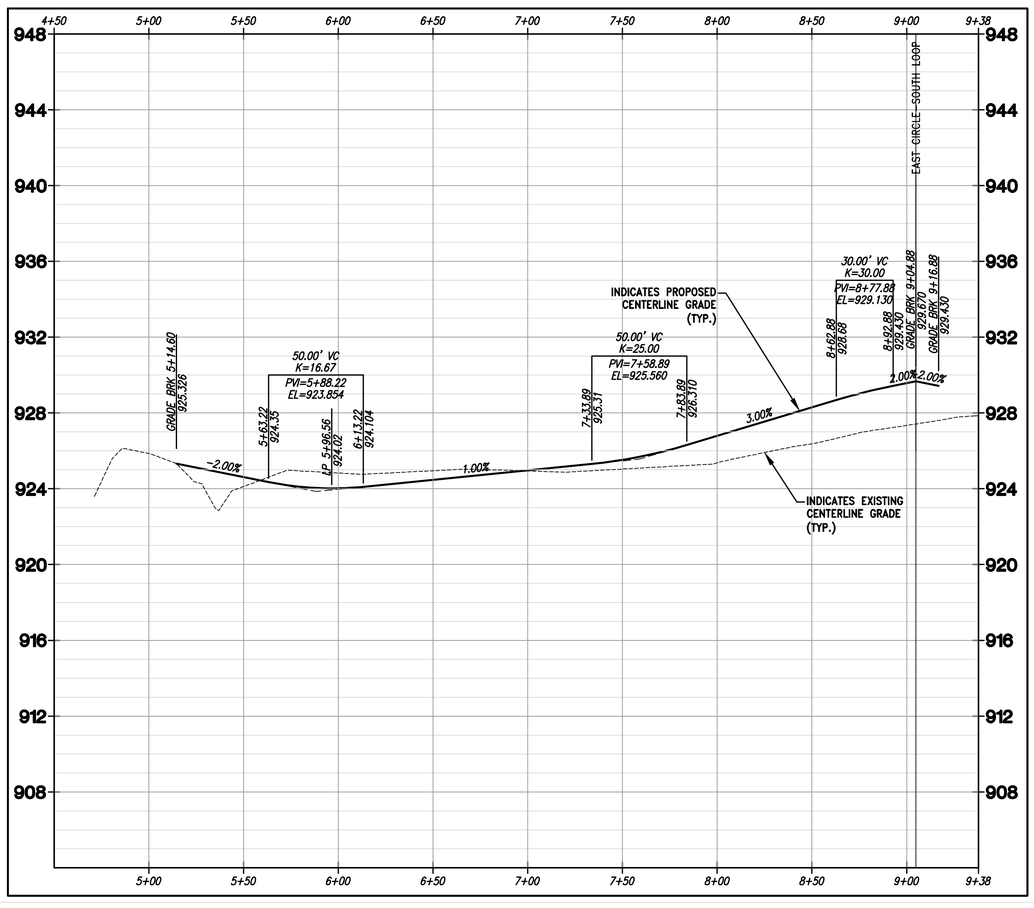

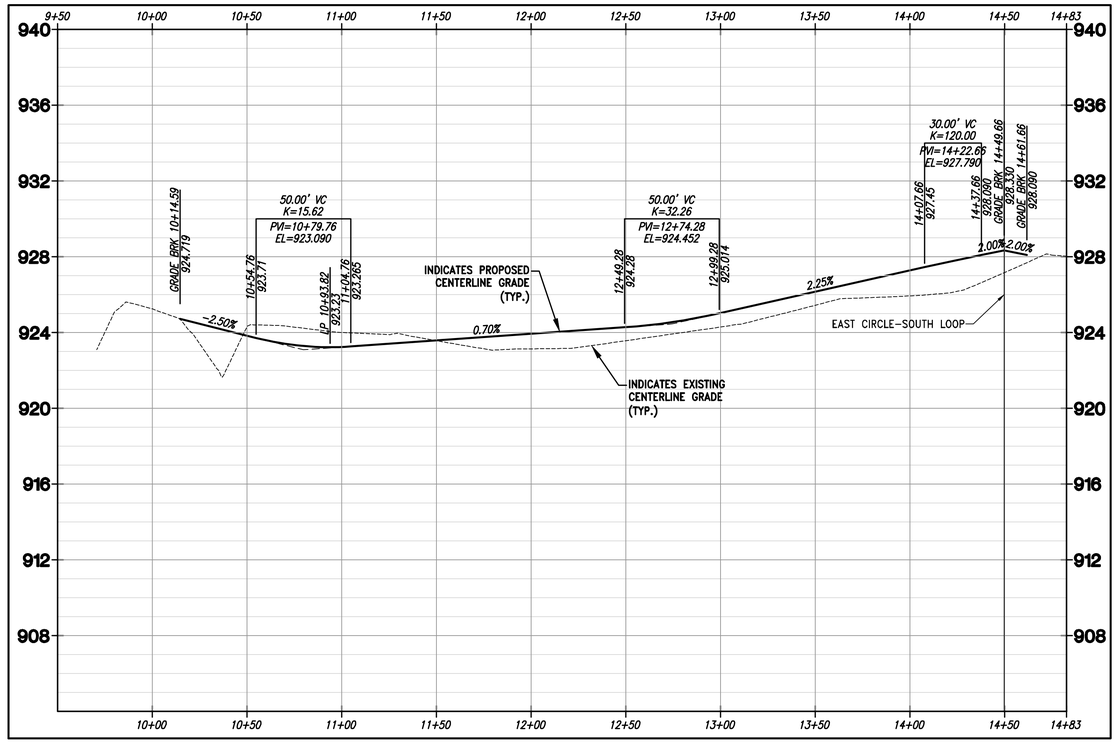

JOSHUA D. PUDELKO E-39620 WAUWATOSA, WI
WISCONSIN PROFESSIONAL ENGINEER

TRIO DESIGN • LAND SURVEYING CIVIL ENGINEERING
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BROOKFIELD, WI 53005
PHONE: (262) 790-1480
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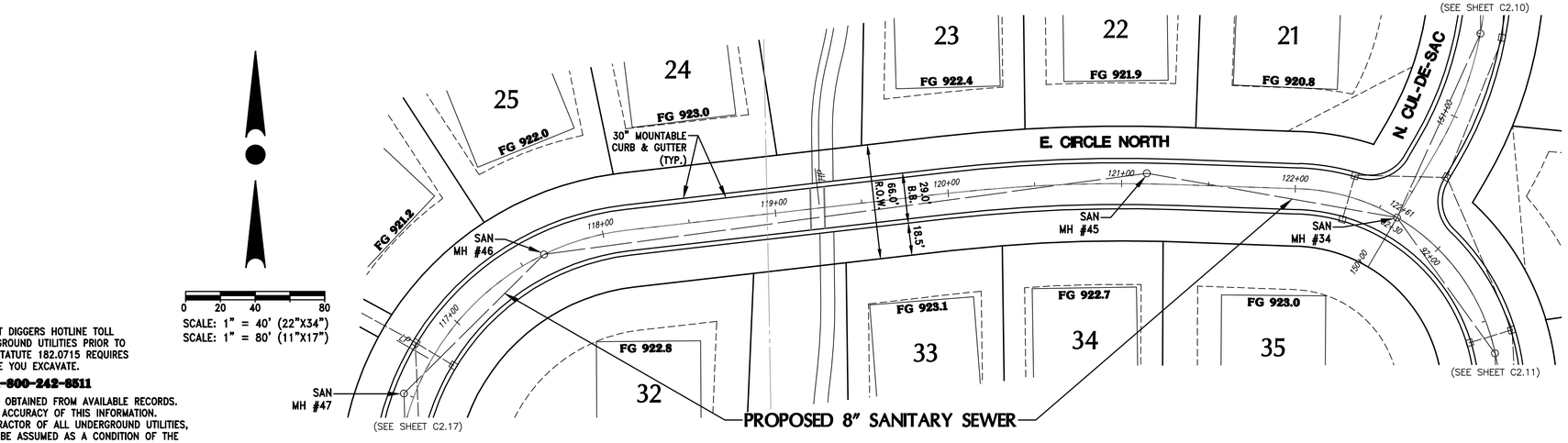

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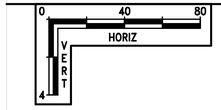

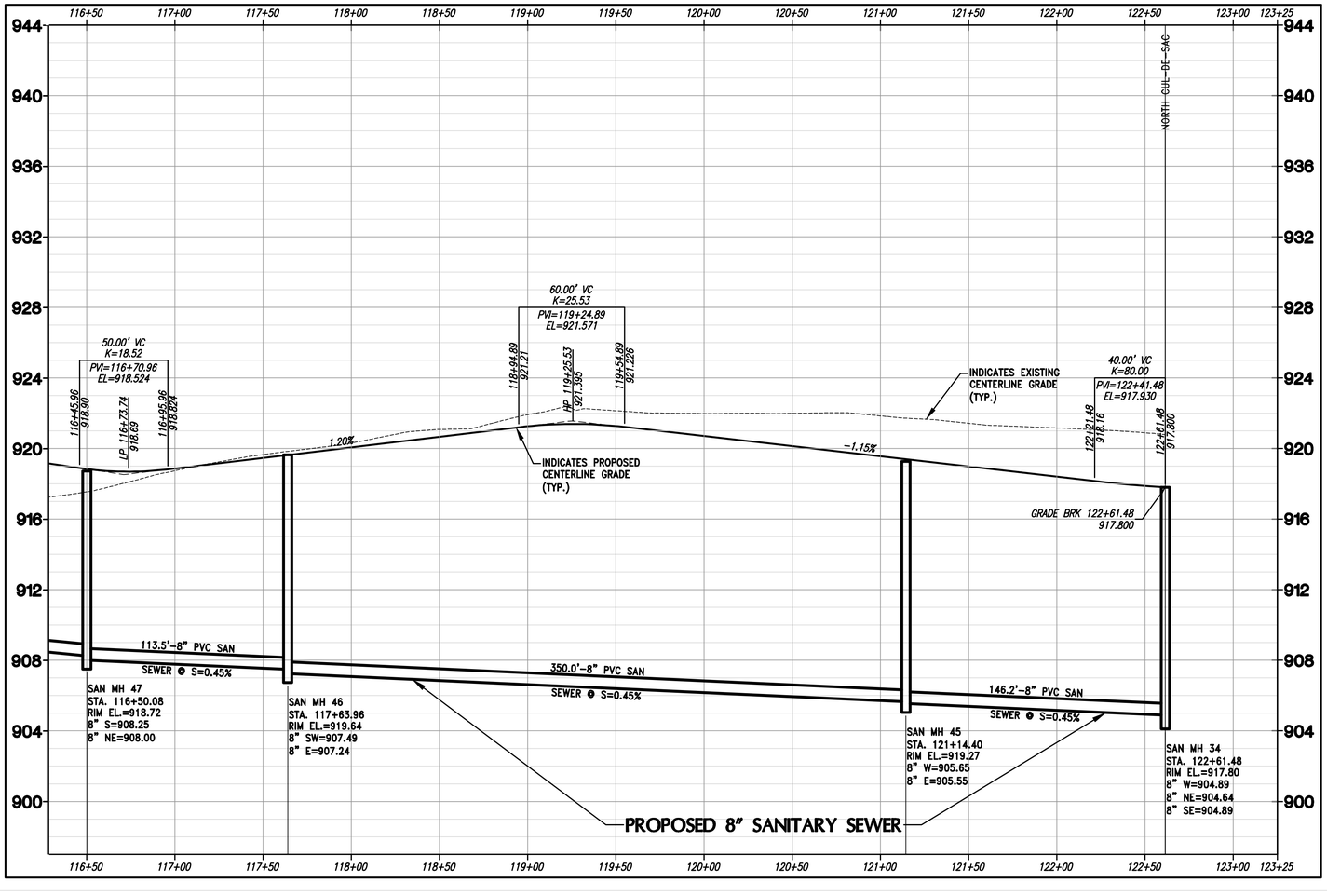

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E-39920
WAUWATOSA, WI
PROFESSIONAL ENGINEER
WISCONSIN

TRIO
DESIGN • LAND SURVEYING
CIVIL ENGINEERING

4100 N. CALHOUN RD., SUITE 300
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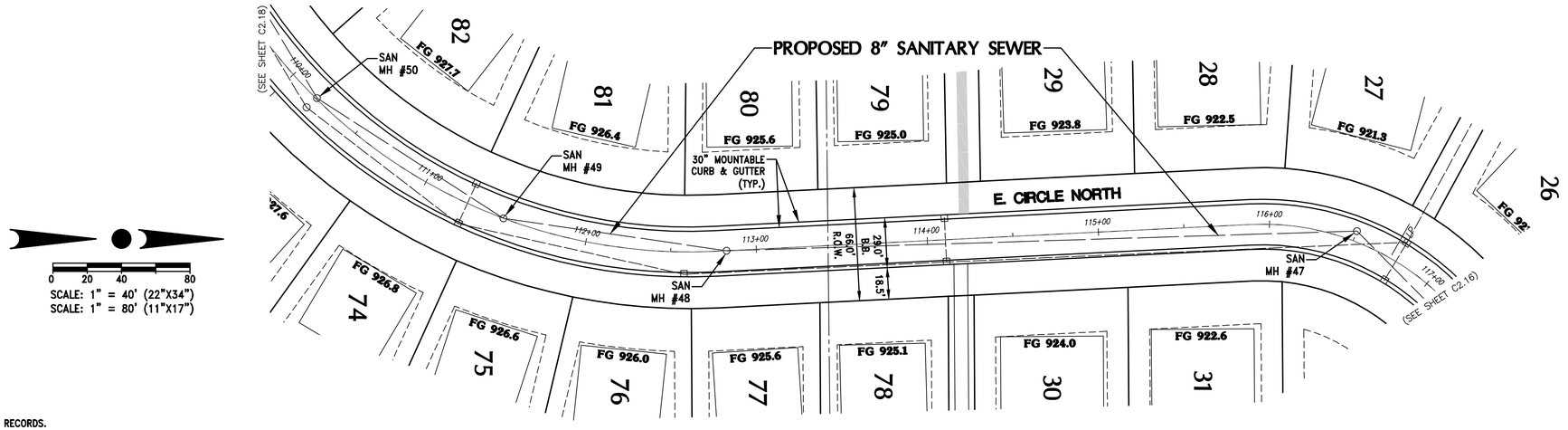

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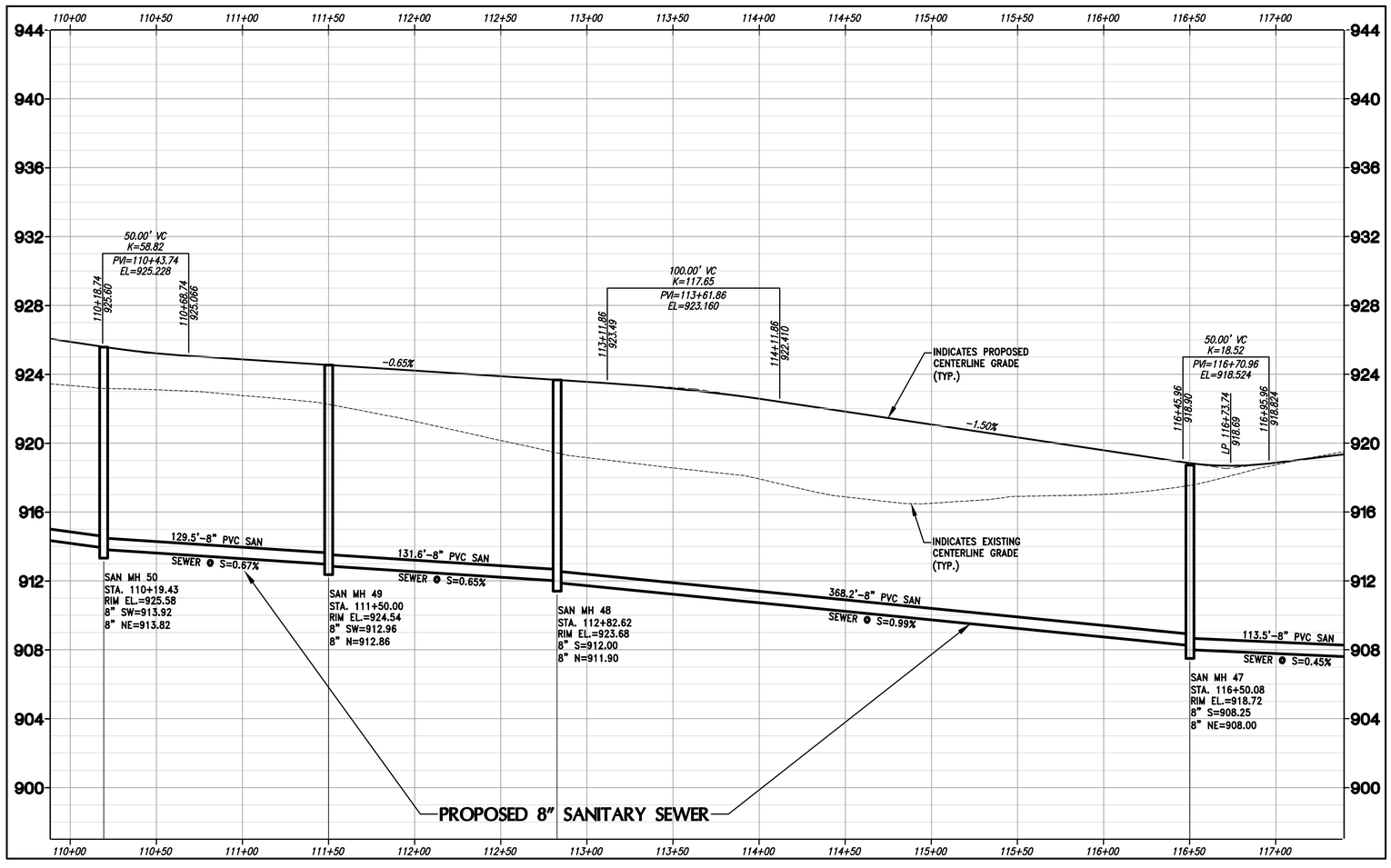

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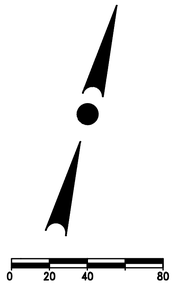

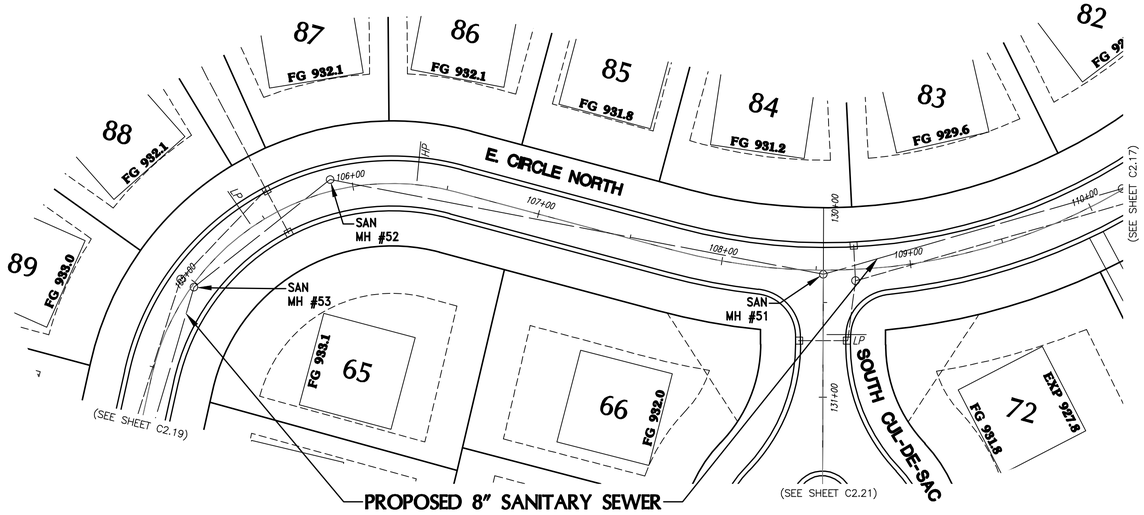

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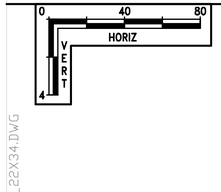

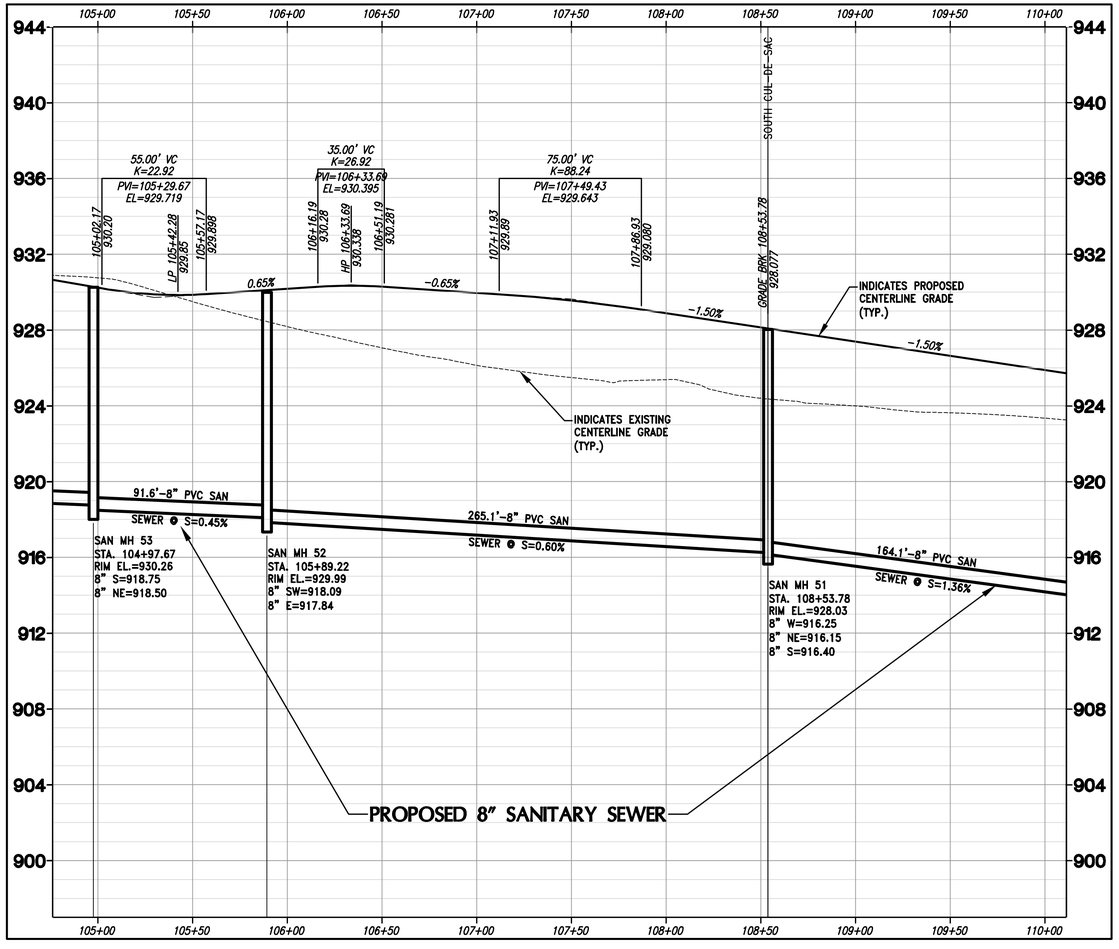

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TRIO
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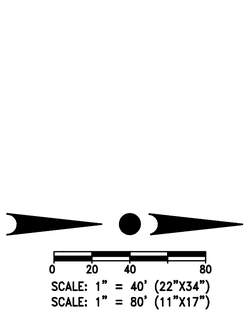
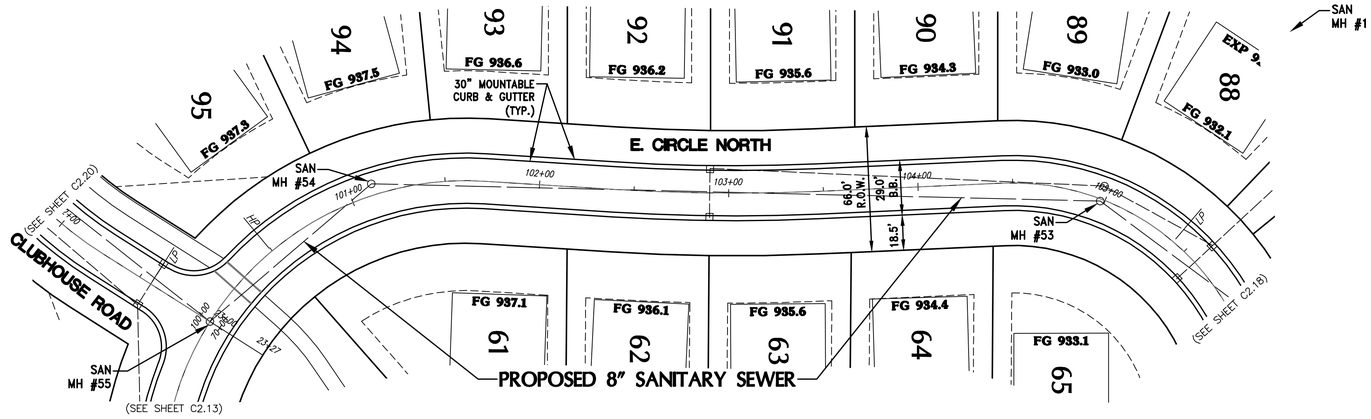
X:\2021\21-071-953 THOMAS-WELSHIRE PROPERTY DELAFIELD\DRAWINGS\PRELIMINARY\WELSHIRE FARMS_RD&SAN_22X34.DWG





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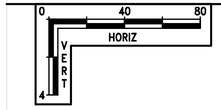

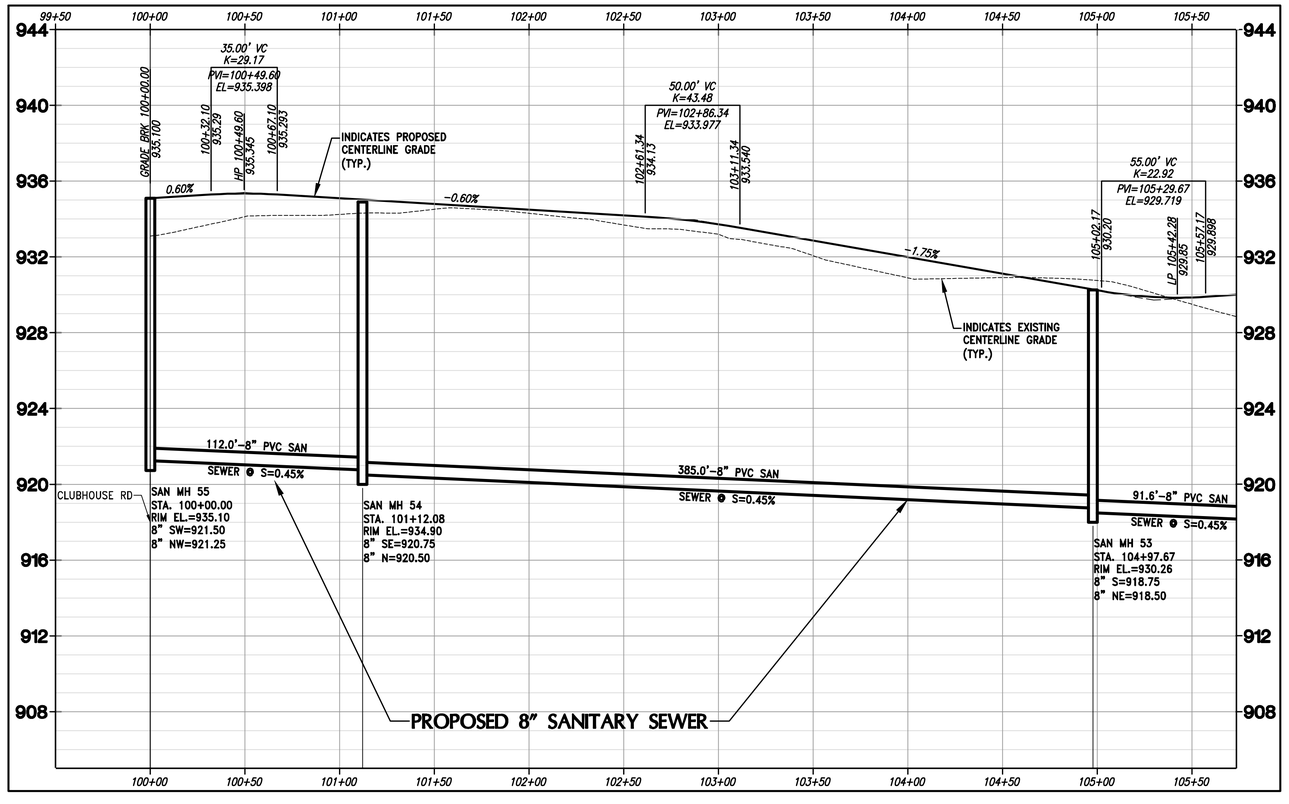

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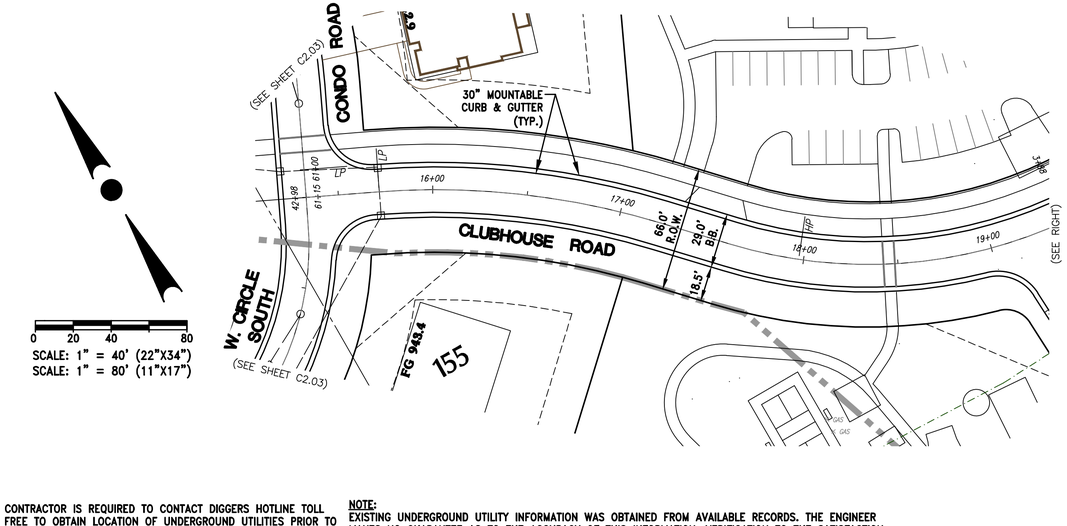

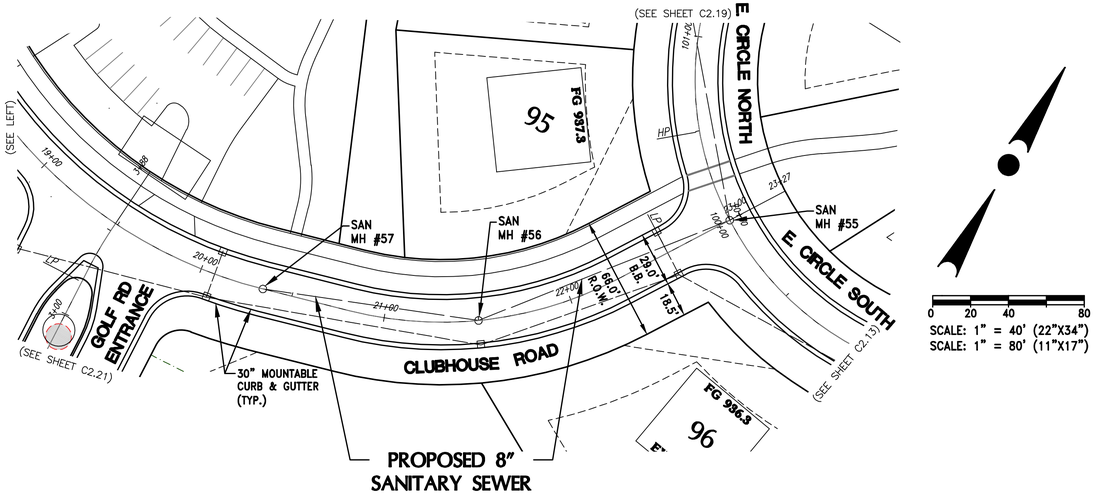

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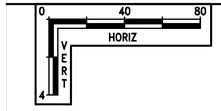

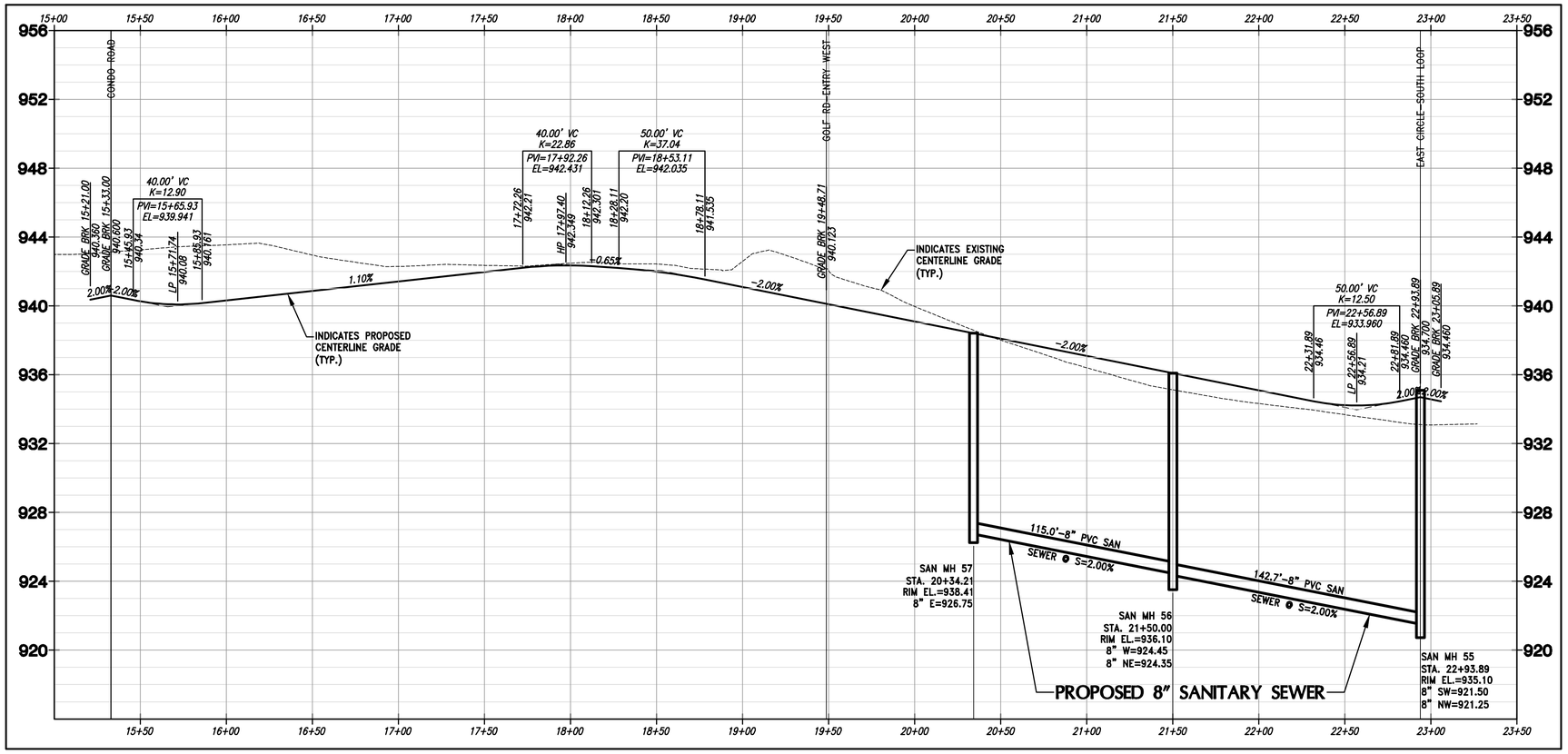

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E-39020
WAUWATOSA, WI
WISCONSIN PROFESSIONAL ENGINEER

TRIO
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SHEET
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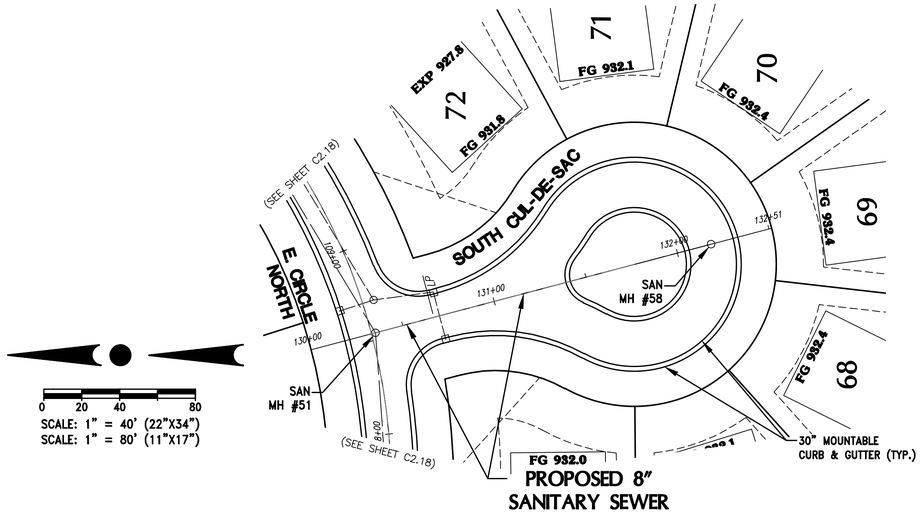

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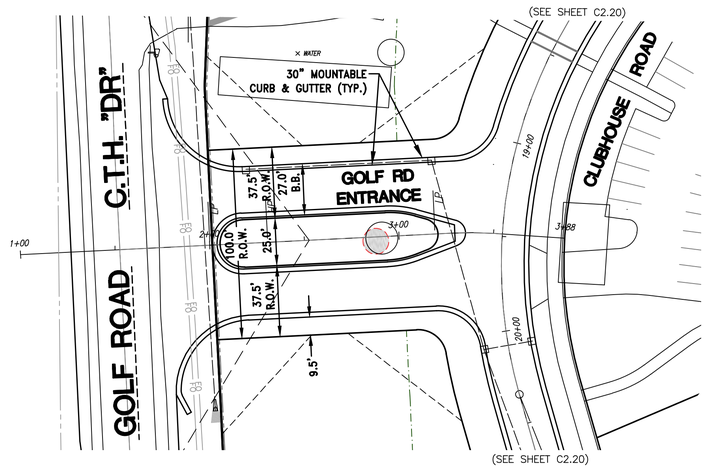

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CONTRACTOR IS REQUIRED TO CONTACT DIGGERS HOTLINE TOLL FREE TO OBTAIN LOCATION OF UNDERGROUND UTILITIES PRIOR TO COMMENCING THE WORK. WISCONSIN STATUTE 182.0715 REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

CALL DIGGERS HOTLINE 1-800-242-8511

NOTE:
EXISTING UNDERGROUND UTILITY INFORMATION WAS OBTAINED FROM AVAILABLE RECORDS. THE ENGINEER MAKES NO GUARANTEE AS TO THE ACCURACY OF THIS INFORMATION. VERIFICATION TO THE SATISFACTION OF THE CONTRACTOR OF ALL UNDERGROUND UTILITIES, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE ASSUMED AS A CONDITION OF THE CONTRACT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN LOCATION OF UTILITIES IN THE FIELD AND LOCATIONS SHOWN ON THE PLANS.

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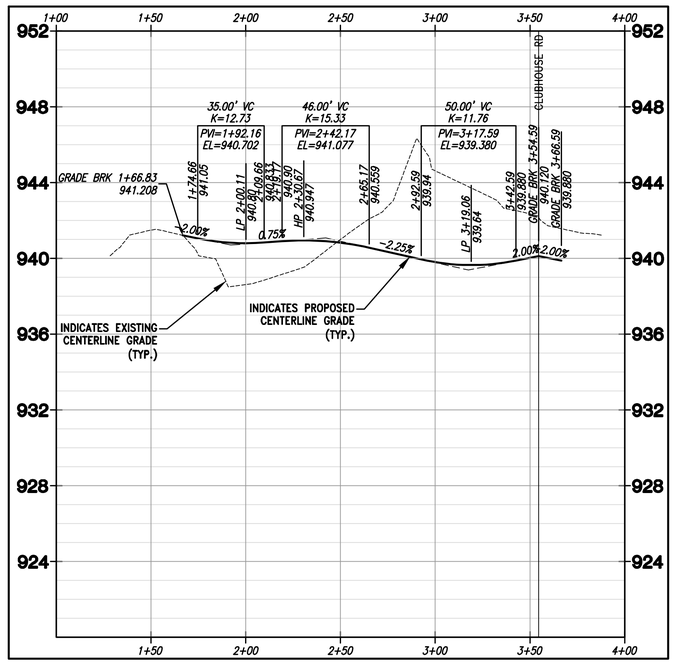


JOSHUA D. PUDELKO E-39920 WAUWATOSA, WI
WISCONSIN PROFESSIONAL ENGINEER

TRIO DESIGN • LAND SURVEYING CIVIL ENGINEERING
4100 N. CALHOUN RD., SUITE 300
BROOKFIELD, WI 53005
PHONE: (262) 790-1480
FAX: (262) 790-1481
EMAIL: jpudelko@trioeng.com

PROJECT:
WELSHIRE FARM
TOWN OF DELAFIELD, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

REVISION HISTORY

DATE	DESCRIPTION
04/09/2024	PRELIMINARY SUBMITTAL

DATE:
APRIL 9, 2024

JOB NUMBER:
21-071-953

DESCRIPTION:
ROADWAY AND SANITARY SEWER PLAN & PROFILE

SHEET
C2.21

Welshire Farm

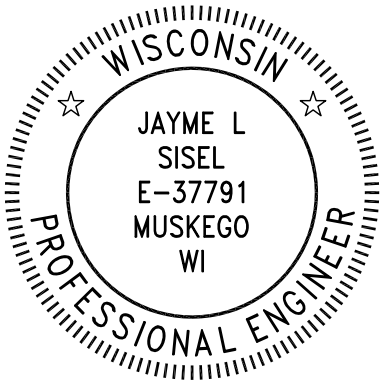
Town of Delafield, Wisconsin

Stormwater Management Plan

Prepared by:

Trio Engineering LLC
4100 N. Calhoun Road
Brookfield, Wisconsin 53005
Contact: Josh Pudelko, P.E.
Telephone: (262) 790-1480
Email: info@trioeng.com

Sound Stormwater Design LLC
Contact: Jayme Sisel, P.E.
Telephone: (414) 286-4739
Email: jayme.sisel@soundstormwater.com



March 20, 2023
Revised June 22, 2023
Revised December 22, 2023
Revised April 9, 2024

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APPENDICES

Figures

Introduction

"Welshire Farm" is a proposed multi-family and single-family residential development on a 151.05-acre parcel located northwest of the intersection of Golf Road and Elmhurst Road in the Town of Delafield, Waukesha County, Wisconsin. Refer to Figure 1 for a general location of the project site.

The proposed subdivision design integrates with the existing topography, preserving trees and wetlands to the maximum extent practicable, and situates ponds and basins where runoff naturally flows, but with controlled outlets that reduce runoff rates and redirect runoff to adequate discharge points. This design approach minimizes site grading and maximizes the existing trees and wetlands that can be retained on the site.

This report documents the design computations for pre-development and post-development conditions and presents a plan for stormwater management that meets the requirements of the Town of Delafield, Waukesha County, and the Wisconsin Department of Natural Resources (WDNR).

Owner/ Developer

The owner, developer, and responsible entity for installation and maintenance of the stormwater management practices is:

Neumann Developments, Inc
N27 W24025 Paul Ct, Suite 100
Pewaukee, Wisconsin 53072
Contact: Bryan Lindgren
Phone: (262) 542-9200

Design Requirements

The following design standards have been used to develop the stormwater management plan for the "Welshire Farm" project:

- Waukesha County Chapter 14, Article VIII, Stormwater Management & Erosion Control Ordinance
- Wisconsin Department of Natural Resources (WDNR) Technical Standards, NR151, and NR216
- Summary of design requirements:
    - Peak Discharge:
        - Waukesha County: The peak flow discharge rates of stormwater runoff from the site under the post-development site conditions shall not exceed the rates under the pre-development conditions for the 1, 2, 10, and 100-year, 24-hour design storm events.

- Water Quality (Total Suspended Solids): Reduce to the maximum extent practicable the total suspended solids load by 80%, based on an average annual rainfall, as compared to no runoff management controls.
- Infiltration: For low impervious developments:
  - Infiltrate sufficient runoff volume so that the post-development infiltration volume is at least 90 percent of pre-development infiltration volume, based on an average annual rainfall.
  - No more than 1 percent of the post-construction site is required as an effective infiltration area.

Analysis Overview

The Stormwater Management Plan for the "Welshire Farm" subdivision has been designed in accordance with the Town of Delafield, Waukesha County, and all applicable state requirements. Pre-development and post-development stormwater runoff conditions for the site were analyzed for**:** runoff volume, peak volume, discharge, detention basin storage capacity required, outlet structure and storm sewer system requirements. The software package used for modeling and analysis was HydroCAD Version 10.10 software by HydroCAD Software Solutions. HydroCAD uses NRCS methods to generate runoff and pond routing hydrographs. The model's capabilities include modeling simple drainage basins, combining hydrographs to determine runoff and storage requirements, and detention basin and outlet structure sizing.

MSE3 rainfall distributions were used for modeling the 1, 2, 10 and 100-year, 24-hour storm events. The corresponding rainfall data used for the modeling was taken from Table 3 of Chapter 14 of the County's Ordinance and is shown in the following table.

TABLE 1
Design Rainfall Values

Storm Recurrence Interval	24-hour Rainfall Depths
1-year	2.4 inches
2-year	2.7 inches
10-year	3.81 inches
100-year	6.18 inches

Soil types for the site were determined from NRCS Soil Survey for Waukesha County and from soil boring logs prepared by Professional Service Industries (PSI). The Soil Survey identifies the soils at the site as mostly Theresa silt loam and Knowles silt loam with some limited areas of Hochheim loam and Ritchey silt loam soils. The soil boring logs indicated the soils encountered as generally 1 to 4 feet of dark brown clay to silty clay with organics underlain by clayey sand and sand with gravel extending to the termination of the borings. Groundwater was encountered with boring B-2, which was completed within the wetland area, at a depth of about 4 feet below existing grade. Groundwater was not observed during or at completion of drilling within the remaining boring locations. Based on this, a hydrologic soil group C was used to determine runoff curve numbers for the site. Refer to Appendix E for details.

Pre-Development Watershed Description

The project site is approximately 151.05-acres in size and is occupied by agricultural fields, woodlands, wetlands, residential homes, and a former farmstead with outbuildings. Surface drainage for the majority of the site is generally towards an on-site wetland that flows south to north and eventually drains to a culvert at Oakton Road that discharges to Pewaukee Lake. The remainder of the site slopes towards roadside ditches at Glen Cove Road, Elmhurst Road, and Gold Road.

Land cover types, drainage boundaries and flow paths are shown on Figure 2, Pre-Development Conditions Plan. The following table summarizes the results of the stormwater model for pre-development conditions. A schematic plan of the hydrological analysis and detailed hydrological computations for pre-development conditions are included in Appendix A.

TABLE 2
Pre-Development Conditions

Subarea, or Junction	Description	Area (acres)	Imp. Area (acres)	Time of Conc. (minutes)	Peak Flow Rate (cfs)			
					1-year	2-year	10-year	100-year
1	Subarea	11.87	0.00	12	10.95	14.33	28.30	61.73
1D	Depression	-	-	-	0.00	0.00	0.00	0.65
2	Subarea	13.69	0.00	13	12.71	16.47	32.14	69.07
3	Subarea	4.59	0.00	10	3.22	4.43	9.64	22.70
4	Subarea	1.08	0.00	9	1.22	1.58	3.04	6.50
5	Subarea	27.96	0.00	14	23.40	30.68	60.75	133.00
6	Subarea	11.23	0.19	22	8.19	10.65	20.84	45.09
6D	Depression	-	-	-	2.16	3.09	7.15	16.64
7	Subarea	12.83	0.00	29	7.24	9.53	19.06	42.19
7D	Depression	-	-	-	5.13	7.49	17.31	39.43
8	Subarea	26.25	0.71	28	14.05	18.71	38.35	86.45
1L	**West Subwatershed**	**25.56**	**0.00**	**-**	**12.71**	**16.47**	**32.14**	**69.07**
2L	**Northwest Subwatershed**	**4.59**	**0.00**	**-**	**3.22**	**4.43**	**9.64**	**22.70**
3L	**North Subwatershed**	**29.04**	**0.00**	**-**	**24.29**	**31.83**	**63.01**	**138.65**
4L	**Southeast Subwatershed**	**50.31**	**0.90**	**-**	**17.49**	**23.93**	**52.16**	**119.79**

Post-Development Site Drainage Description

The proposed development includes the construction of twenty-eight (28) 2-family condominium units and one hundred fifty-five (155) single-family lots. The proposed plan will disturb approximately 100-acres and will result in a net increase in impervious area of approximately 28.38 acres. Figure 3, Post-Development Conditions Plan, shows the proposed land cover, grading, drainage boundaries, flow paths, and proposed site and stormwater management improvements. The following table summarizes the results of the stormwater model for post-development

conditions. A schematic plan of the hydrological analysis and detailed hydrological computations for post-development conditions are included in Appendix B.

TABLE 3
Post-Development Conditions

Subarea, or Junction	Description	Area (acres)	Imp. Area (acres)	Time of Conc. (minutes)	Peak Flow Rate (cfs)			
					1-year	2-year	10-year	100-year
1.1	Subarea	2.18	0.33	14	1.72	2.28	4.61	10.36
1.2	Subarea	10.24	3.50	16	11.78	14.73	26.41	52.99
1P&B	Basin 1.1B, Pond 1.2P, & Basin 1.2B	-	-	-	0.67	0.80	1.17	3.99
2	Subarea	1.88	1.06	8	3.78	4.54	7.45	13.75
2B	Basin	-	-	-	3.56	4.33	7.60	14.36
3	Subarea	11.09	4.75	14	15.18	18.67	32.49	63.08
3P	Pond	-	-	-	0.43	1.03	7.76	30.26
4	Subarea	4.91	0.58	13	3.62	4.87	10.20	23.21
4B	Basin	-	-	-	0.00	0.00	0.00	2.22
5	Subarea	2.43	0.29	22	1.38	1.86	3.90	8.98
5RG	Rain Garden	-	-	-	0.07	0.12	0.24	0.90
6	Subarea	8.82	2.99	22	7.86	9.92	18.22	37.47
6P	Pond	-	-	-	0.35	0.39	2.31	11.95
7.1	Subarea	4.91	0.67	20	3.15	4.21	8.58	19.26
7.2	Subarea	6.66	1.93	20	6.35	8.01	14.68	30.05
7RG&P	Rain Garden 7RG & Pond 7P	-	-	-	0.38	0.42	0.56	3.21
8	Subarea	5.09	0.77	13	4.07	5.40	11.03	24.60
8B	Basin	-	-	-	0.09	0.14	0.26	2.28
9	Subarea	10.75	3.58	19	11.90	14.77	26.08	51.61
9P	Pond	-	-	-	0.28	0.32	0.43	6.65
10	Subarea	1.75	0.24	16	1.30	1.72	3.49	7.81
10B	Basin	-	-	-	0.00	0.00	0.00	0.21
11	Subarea	7.44	2.97	15	9.92	12.21	21.13	41.03
11P	Pond	-	-	-	0.29	0.32	1.29	14.60
12	Subarea	6.97	1.90	15	7.18	9.13	16.98	35.22
12P	Pond	-	-	-	0.61	1.13	7.48	14.73
13	Subarea	3.93	1.01	11	4.94	6.22	11.31	22.95
13P	Pond	-	-	-	0.32	0.38	0.53	7.42
14	Subarea	1.74	0.13	15	1.22	1.64	3.41	7.76
15	Subarea	4.06	0.72	11	3.87	5.07	9.98	21.73
16	Subarea	11.68	1.30	13	8.52	11.45	23.96	54.55
17	Subarea	2.97	0.56	10	2.96	3.87	7.66	16.70
1L	**West Subwatershed**	**18.97**	**5.89**	**-**	**3.16**	**4.10**	**9.12**	**42.78**
2L	**Northwest Subwatershed**	**5.67**	**1.14**	**-**	**1.43**	**1.90**	**3.80**	**13.66**
3L	**North Subwatershed**	**50.36**	**15.07**	**-**	**7.79**	**9.84**	**18.23**	**48.92**
4L	**Southeast Subwatershed**	**34.50**	**7.18**	**-**	**8.79**	**11.79**	**24.52**	**55.56**

Stormwater Detention Basin Design & Summary

The stormwater management plan proposes eight (8) ponds, two (2) rain gardens, and six (6) infiltration basins as the primary means of stormwater management for the site. In conformance with the County and WDNR requirements, the ponds and basins have been designed with 4:1 side slopes on the berms, 10-foot top of berm widths, and 10-foot wide safety shelfs below the normal water level within the ponds. Additionally, all outfall structures discharge to energy dissipating level spreaders prior to discharging into the adjacent wetlands.

Understanding the sensitivity of the site, additional measures were taken to maximize infiltration opportunities. This included over-excavating the infiltration basins and enhancing them with engineered soil in order to expose existing granular subsoils that are more suitable for infiltration. In addition, rain gardens were placed in select open space areas where water can have the opportunity to pond (maximum depth 6-inch) and infiltrate slowly into the subsurface at a lesser rate (0.07 to 0.11 in/hr) without negatively impacting the development. These measures were done to significantly reduce peak discharge rates and volumes at all four discharge points for the 1, 2, 10, and 100-yr, 24-hour storms.

Peak Discharge Summaries

Waukesha County requires post-development peak discharge rates to be no greater than pre-development discharge rates for the 1, 2, 10, and 100-yr, 24-hr design storms. The following table compares the results of the analysis from a peak discharge standpoint.

TABLE 4
Comparison of Peak Discharge

West Subwatershed (Link 1L)			
	Pre-Development		Post-Development
1-year	12.71 cfs	>	3.16 cfs
2-year	16.47 cfs	>	4.10 cfs
10-year	32.14 cfs	>	9.12 cfs
100-year	69.07 cfs	>	42.78 cfs
Northwest Subwatershed (Link 2L)			
	Pre-Development		Post-Development
1-year	3.22 cfs	>	1.43 cfs
2-year	4.43 cfs	>	1.90 cfs
10-year	9.64 cfs	>	3.80 cfs
100-year	22.70 cfs	>	13.66 cfs
North Subwatershed (Link 3L)			
	Pre-Development		Post-Development
1-year	24.29 cfs	>	7.79 cfs
2-year	31.83 cfs	>	9.84 cfs
10-year	63.01 cfs	>	18.23 cfs
100-year	138.65 cfs	>	48.92 cfs

TABLE 4
Comparison of Peak Discharge

Southeast Subwatershed (Link 4L)

	Pre-Development		Post-Development
1-year	17.49 cfs	>	8.79 cfs
2-year	23.93 cfs	>	11.79 cfs
10-year	52.16 cfs	>	24.52 cfs
100-year	119.79 cfs	>	55.56 cfs

Water Quality

The Waukesha County requires new development sites to be designed to remove 80 percent of TSS, based on an average annual rainfall as compared to no runoff management controls. Stormwater quality was analyzed using SLAMM Version 10.5.0 software, developed by Robert Pitt and John Voorhees. The results of the SLAMM analysis indicate that approximately 81.0 percent of TSS will be removed from stormwater as a result of the proposed wet detention ponds, rain gardens, infiltration basins and the disconnected nature of select roof and patio areas in conformance with WDNR's connected impervious guidance outlined in Document 3800-2020-1.

Based on conversations with the WDNR, to realize the treatment credit for disconnected surfaces two models are created. The first model is run with all surfaces modeled as connected to determine the total TSS loading produced prior to any treatment practices. The second model is run with select surfaces disconnected (such as backyard roof and patio areas) to determine the total TSS loading released after treatment practices. The particulate solids reduction percentage is calculated by dividing the total TSS removed by the total TSS loading produced (prior to any BMPs). Detailed computations are included in Appendix C.

Infiltration

Waukesha County's Chapter 14 requires low imperviousness developments to infiltrate sufficient runoff volume so that the post-development infiltration volume is at least 90% of the pre-development infiltration volume, based on an average annual rainfall. However, no more than 1% of the project site is required as an effective infiltration area.

Two (2) rain gardens and six (6) infiltration basins were incorporated into the development plan to meet infiltration performance standards for the proposed subdivision. Design infiltration rates for the site were taken from Table 2 of WDNR Technical Standard 1002, Site Evaluation for Stormwater Infiltration. Static infiltrations rates for the in-situ soils at each basin were based on the least permeable soil horizon within 5 feet below the native soil interface. Infiltration calculations were based on the entire 151.05-acre site and were analyzed using winSLAMM to determine runoff volumes for both pre-development and post-development conditions. The results of the winSLAMM analysis indicate that the site will infiltrate approximately 94.4 percent of the pre-development infiltration volume. Detailed computations are included in Appendix D.

Conclusion

The proposed development will maintain compliance with the Town of Delafield, Waukesha County, and the WDNR's requirements for control of stormwater quantity, quality, and infiltration.

Prepared by:

SOUND STORMWATER DESIGN LLC

Jayme Sisel, P.E.

FIGURES

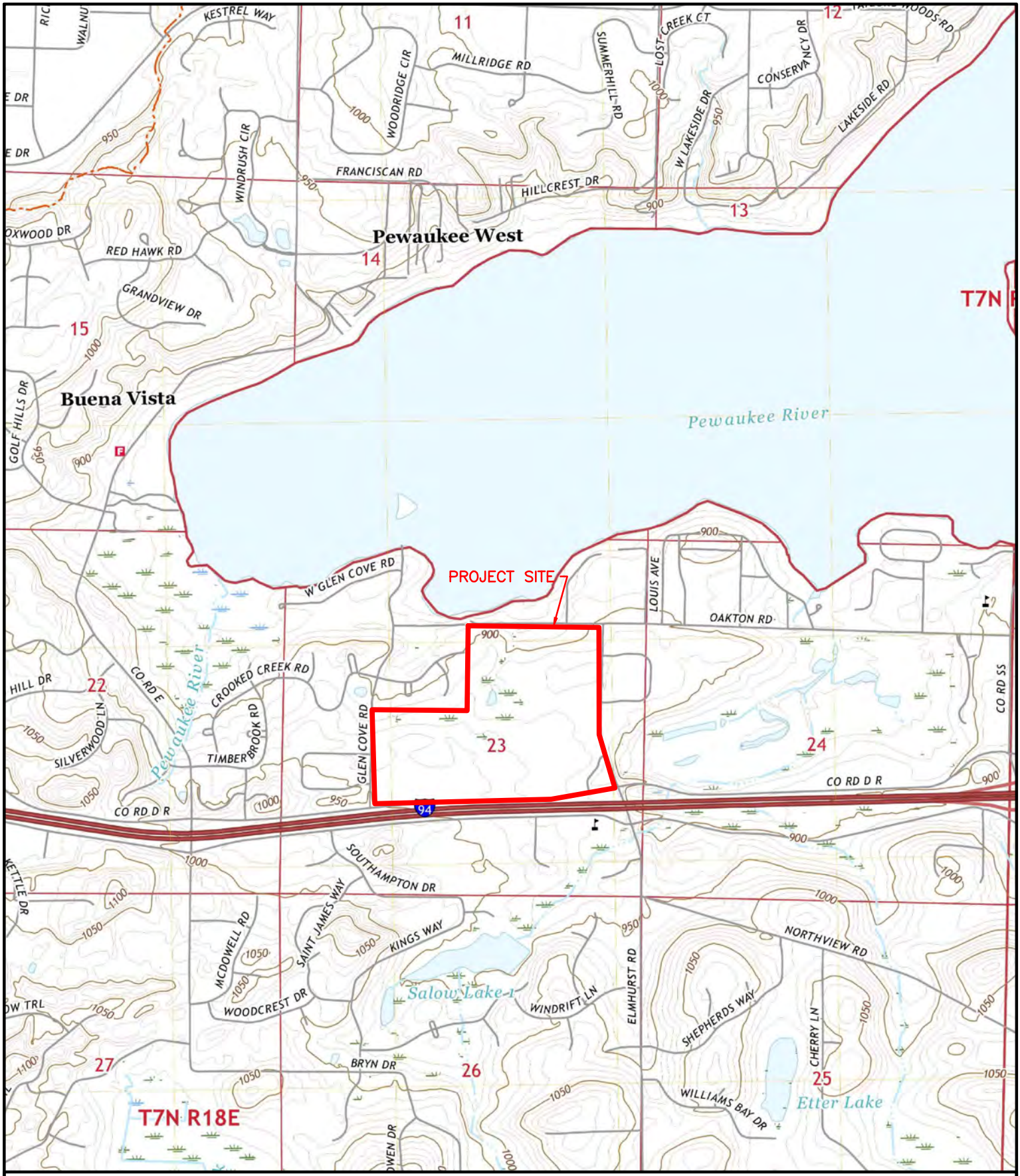

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FIGURE 1

SITE LOCATION MAP

WELSHIRE FARM
TOWN OF DELAFIELD, WISCONSIN

SOUND STORMWATER DESIGN

NORTHWEST DISCHARGE POINT

NORTH DISCHARGE POINT

OAKTON ROAD

WEST DISCHARGE POINT

SUBAREA 3

SUBAREA 4

SUBAREA 9 (UNDISTURBED)

ELMHURST ROAD

SUBAREA 6

SUBAREA 5

EXISTING DEPRESSION 6D

EXISTING DEPRESSION 7D

EXISTING DEPRESSION 1D

SUBAREA 2

SUBAREA 7

SUBAREA 1

SUBAREA 8

SOUTHEAST DISCHARGE POINT

GLEN COVE ROAD

GOLF ROAD

0 75' 150' 300'

SCALE: 1" = 150'

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SOUND STORMWATER DESIGN

Copper Oaks Ct.
Muskego, WI 53150
414.286.4739
jayme.sisel@soundstormwater.com

CLIENT:
NEUMANN DEVELOPMENT, INC.

PROJECT TITLE:
WELSHIRE FARM DEVELOPMENT
GOLF ROAD
TOWN OF DELAFIELD, WISCONSIN

DATE: 04-09-24

JOB NO: 2023-003

SHEET TITLE:
PRE-DEVELOPMENT CONDITIONS PLAN

FIGURE:
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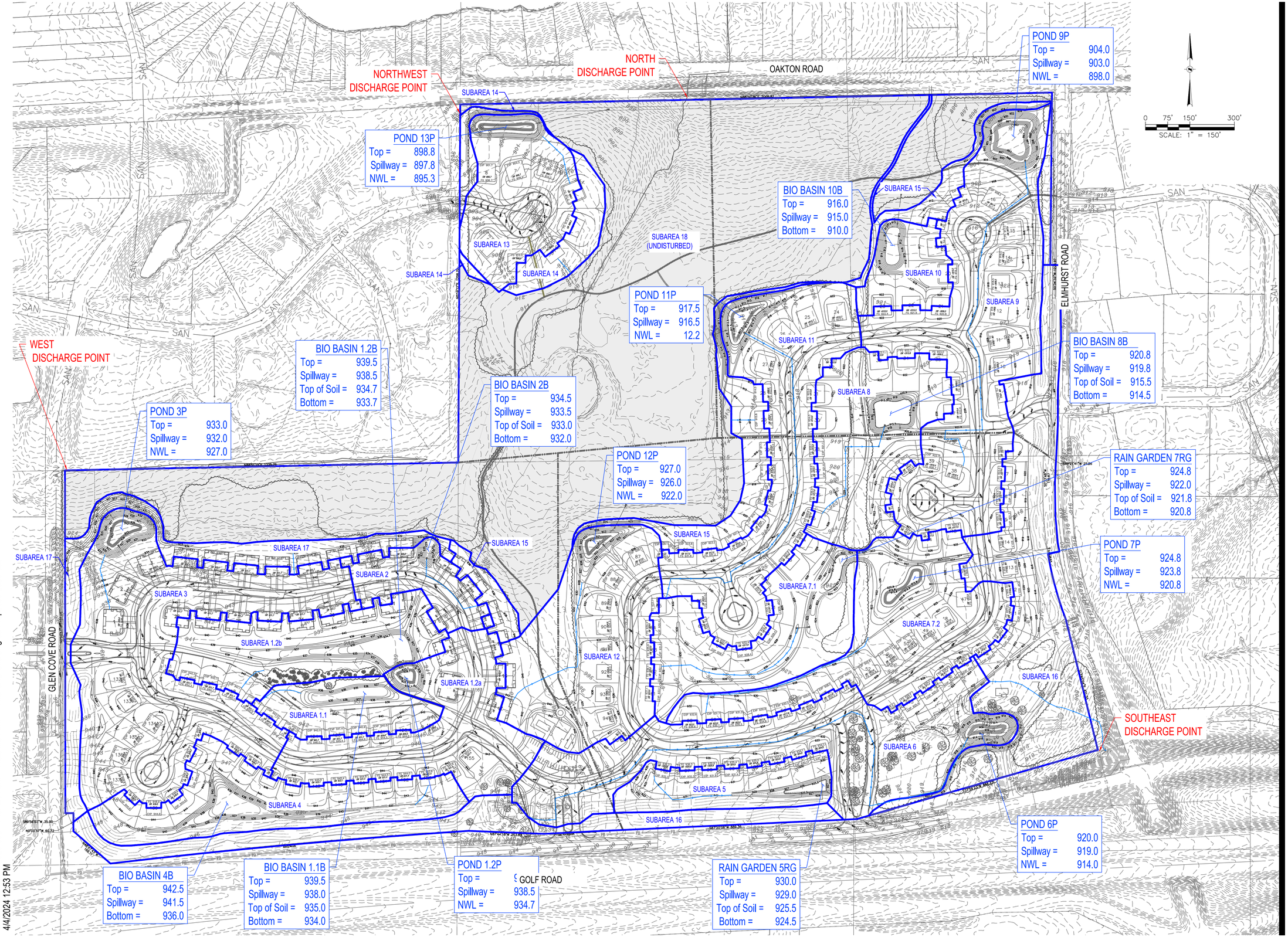

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SOUND STORMWATER DESIGN

Copper Oaks Ct.
Muskego, WI 53150
414.286.4739
jayme.sisel@soundstormwater.com

CLIENT:
NEUMANN DEVELOPMENT, INC.

PROJECT TITLE:
WELSHIRE FARM DEVELOPMENT
GOLF ROAD
TOWN OF DELAFIELD, WISCONSIN

DATE: 04-09-24

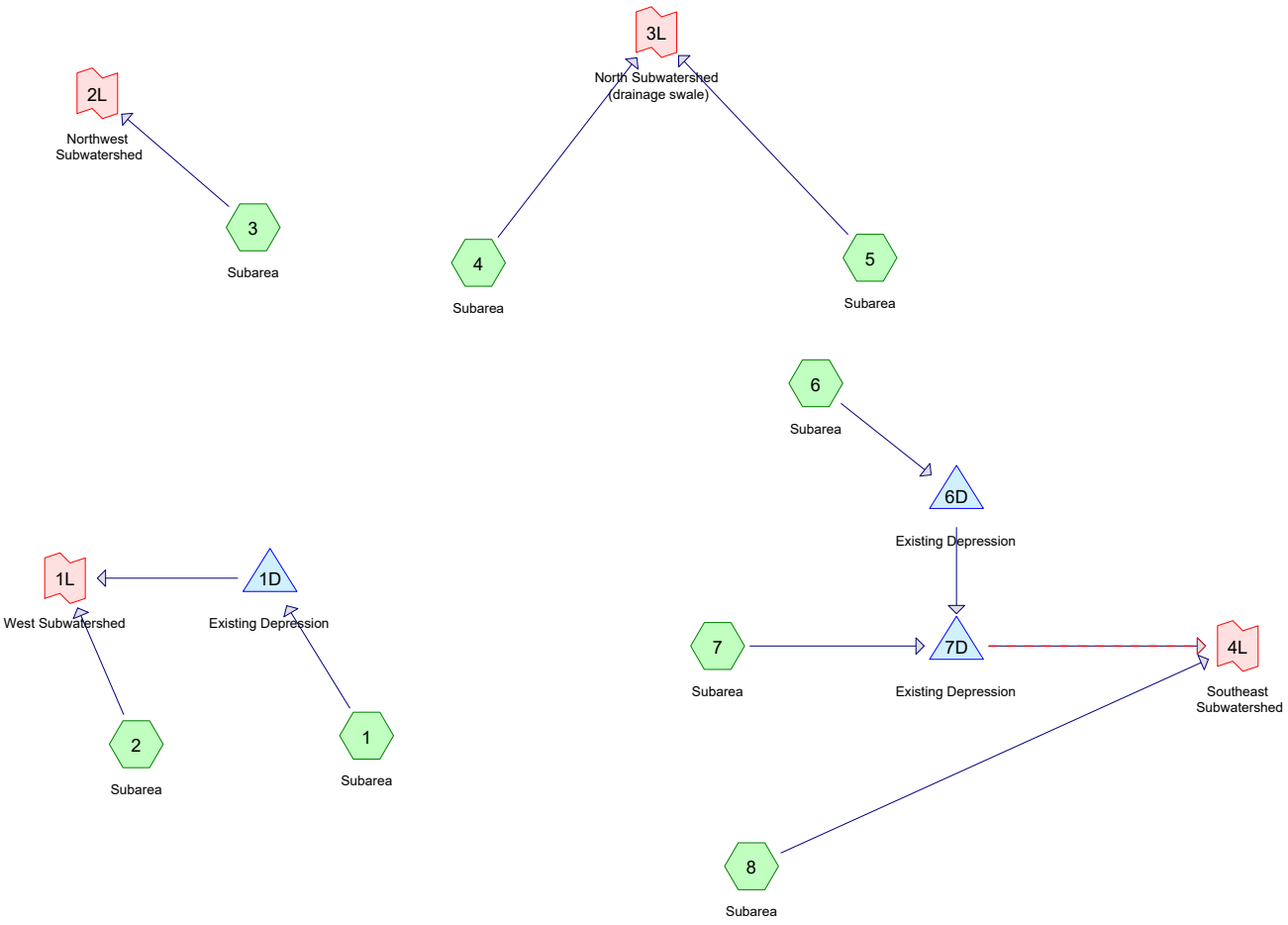
JOB NO: 2023-003

SHEET TITLE:
POST-DEVELOPMENT CONDITIONS PLAN

FIGURE:
3

APPENDIX A

Pre-Development Hydrologic Analysis



Subcat Reach Pond Link

Routing Diagram for Existing_2023-003
Prepared by Sound Stormwater Design, Printed 4/4/2024

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1 yr	MSE 24-hr	3	Default	24.00	1	2.40	2
2	2 yr	MSE 24-hr	3	Default	24.00	1	2.70	2
3	10 yr	MSE 24-hr	3	Default	24.00	1	3.81	2
4	100 yr	MSE 24-hr	3	Default	24.00	1	6.18	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
88.490	78	cropland - C soils (1, 2, 3, 4, 5, 6, 7, 8)
0.710	98	impervious (8)
4.140	74	maintained lawn - C soils (8)
0.610	74	offsite lawn (ROW) - C soils (6, 7)
0.190	98	offsite road (6)
15.360	70	woodland - C soils (1, 2, 3, 5, 6, 7, 8)
109.500	**77**	**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Subarea Runoff Area=11.870 ac 0.00% Impervious Runoff Depth>0.68"
Flow Length=400' Slope=0.0200 '/' Tc=11.7 min CN=77 Runoff=10.95 cfs 0.670 af

Subcatchment2: Subarea Runoff Area=13.690 ac 0.00% Impervious Runoff Depth>0.72"
Flow Length=630' Slope=0.0200 '/' Tc=13.4 min CN=78 Runoff=12.71 cfs 0.825 af

Subcatchment3: Subarea Runoff Area=4.590 ac 0.00% Impervious Runoff Depth>0.51"
Flow Length=630' Slope=0.0400 '/' Tc=9.9 min CN=73 Runoff=3.22 cfs 0.197 af

Subcatchment4: Subarea Runoff Area=1.080 ac 0.00% Impervious Runoff Depth>0.72"
Flow Length=190' Slope=0.0300 '/' Tc=8.6 min CN=78 Runoff=1.22 cfs 0.065 af

Subcatchment5: Subarea Runoff Area=27.960 ac 0.00% Impervious Runoff Depth>0.68"
Flow Length=740' Slope=0.0200 '/' Tc=14.2 min CN=77 Runoff=23.40 cfs 1.579 af

Subcatchment6: Subarea Runoff Area=11.230 ac 1.69% Impervious Runoff Depth>0.72"
Flow Length=760' Tc=21.5 min CN=78 Runoff=8.19 cfs 0.676 af

Subcatchment7: Subarea Runoff Area=12.830 ac 0.00% Impervious Runoff Depth>0.68"
Flow Length=1,725' Slope=0.0100 '/' Tc=29.4 min CN=77 Runoff=7.24 cfs 0.723 af

Subcatchment8: Subarea Runoff Area=26.250 ac 2.70% Impervious Runoff Depth>0.63"
Flow Length=1,580' Slope=0.0100 '/' Tc=27.9 min CN=76 Runoff=14.05 cfs 1.385 af

Pond 1D: Existing Depression Peak Elev=938.58' Storage=0.510 af Inflow=10.95 cfs 0.670 af
Discarded=0.19 cfs 0.184 af Primary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.184 af

Pond 6D: Existing Depression Peak Elev=917.77' Storage=0.339 af Inflow=8.19 cfs 0.676 af
Discarded=0.07 cfs 0.042 af Primary=2.16 cfs 0.512 af Outflow=2.22 cfs 0.554 af

Pond 7D: Existing Depression Peak Elev=917.76' Storage=0.158 af Inflow=7.24 cfs 1.235 af
Discarded=0.03 cfs 0.020 af Primary=5.13 cfs 1.161 af Outflow=5.17 cfs 1.182 af

Link 1L: West Subwatershed Inflow=12.71 cfs 0.825 af
Primary=12.71 cfs 0.825 af

Link 2L: Northwest Subwatershed Inflow=3.22 cfs 0.197 af
Primary=3.22 cfs 0.197 af

Link 3L: North Subwatershed (drainage swale) Inflow=24.29 cfs 1.644 af
Primary=24.29 cfs 1.644 af

Link 4L: Southeast Subwatershed Inflow=17.49 cfs 2.546 af
Primary=17.49 cfs 2.546 af

Total Runoff Area = 109.500 ac Runoff Volume = 6.120 af Average Runoff Depth = 0.67"
99.18% Pervious = 108.600 ac 0.82% Impervious = 0.900 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Subarea Runoff Area=11.870 ac 0.00% Impervious Runoff Depth>0.87"
Flow Length=400' Slope=0.0200 '/' Tc=11.7 min CN=77 Runoff=14.33 cfs 0.858 af

Subcatchment2: Subarea Runoff Area=13.690 ac 0.00% Impervious Runoff Depth>0.92"
Flow Length=630' Slope=0.0200 '/' Tc=13.4 min CN=78 Runoff=16.47 cfs 1.049 af

Subcatchment3: Subarea Runoff Area=4.590 ac 0.00% Impervious Runoff Depth>0.68"
Flow Length=630' Slope=0.0400 '/' Tc=9.9 min CN=73 Runoff=4.43 cfs 0.260 af

Subcatchment4: Subarea Runoff Area=1.080 ac 0.00% Impervious Runoff Depth>0.92"
Flow Length=190' Slope=0.0300 '/' Tc=8.6 min CN=78 Runoff=1.58 cfs 0.083 af

Subcatchment5: Subarea Runoff Area=27.960 ac 0.00% Impervious Runoff Depth>0.87"
Flow Length=740' Slope=0.0200 '/' Tc=14.2 min CN=77 Runoff=30.68 cfs 2.022 af

Subcatchment6: Subarea Runoff Area=11.230 ac 1.69% Impervious Runoff Depth>0.92"
Flow Length=760' Tc=21.5 min CN=78 Runoff=10.65 cfs 0.860 af

Subcatchment7: Subarea Runoff Area=12.830 ac 0.00% Impervious Runoff Depth>0.87"
Flow Length=1,725' Slope=0.0100 '/' Tc=29.4 min CN=77 Runoff=9.53 cfs 0.926 af

Subcatchment8: Subarea Runoff Area=26.250 ac 2.70% Impervious Runoff Depth>0.82"
Flow Length=1,580' Slope=0.0100 '/' Tc=27.9 min CN=76 Runoff=18.71 cfs 1.786 af

Pond 1D: Existing Depression Peak Elev=938.68' Storage=0.669 af Inflow=14.33 cfs 0.858 af
Discarded=0.23 cfs 0.216 af Primary=0.00 cfs 0.000 af Outflow=0.23 cfs 0.216 af

Pond 6D: Existing Depression Peak Elev=917.86' Storage=0.423 af Inflow=10.65 cfs 0.860 af
Discarded=0.08 cfs 0.045 af Primary=3.09 cfs 0.690 af Outflow=3.17 cfs 0.735 af

Pond 7D: Existing Depression Peak Elev=917.84' Storage=0.200 af Inflow=9.53 cfs 1.616 af
Discarded=0.04 cfs 0.022 af Primary=7.49 cfs 1.540 af Outflow=7.53 cfs 1.561 af

Link 1L: West Subwatershed Inflow=16.47 cfs 1.049 af
Primary=16.47 cfs 1.049 af

Link 2L: Northwest Subwatershed Inflow=4.43 cfs 0.260 af
Primary=4.43 cfs 0.260 af

Link 3L: North Subwatershed (drainage swale) Inflow=31.83 cfs 2.104 af
Primary=31.83 cfs 2.104 af

Link 4L: Southeast Subwatershed Inflow=23.93 cfs 3.326 af
Primary=23.93 cfs 3.326 af

Total Runoff Area = 109.500 ac Runoff Volume = 7.843 af Average Runoff Depth = 0.86"
99.18% Pervious = 108.600 ac 0.82% Impervious = 0.900 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Subarea Runoff Area=11.870 ac 0.00% Impervious Runoff Depth>1.66"
Flow Length=400' Slope=0.0200 '/' Tc=11.7 min CN=77 Runoff=28.30 cfs 1.645 af

Subcatchment2: Subarea Runoff Area=13.690 ac 0.00% Impervious Runoff Depth>1.74"
Flow Length=630' Slope=0.0200 '/' Tc=13.4 min CN=78 Runoff=32.14 cfs 1.980 af

Subcatchment3: Subarea Runoff Area=4.590 ac 0.00% Impervious Runoff Depth>1.39"
Flow Length=630' Slope=0.0400 '/' Tc=9.9 min CN=73 Runoff=9.64 cfs 0.532 af

Subcatchment4: Subarea Runoff Area=1.080 ac 0.00% Impervious Runoff Depth>1.74"
Flow Length=190' Slope=0.0300 '/' Tc=8.6 min CN=78 Runoff=3.04 cfs 0.156 af

Subcatchment5: Subarea Runoff Area=27.960 ac 0.00% Impervious Runoff Depth>1.66"
Flow Length=740' Slope=0.0200 '/' Tc=14.2 min CN=77 Runoff=60.75 cfs 3.875 af

Subcatchment6: Subarea Runoff Area=11.230 ac 1.69% Impervious Runoff Depth>1.73"
Flow Length=760' Tc=21.5 min CN=78 Runoff=20.84 cfs 1.623 af

Subcatchment7: Subarea Runoff Area=12.830 ac 0.00% Impervious Runoff Depth>1.66"
Flow Length=1,725' Slope=0.0100 '/' Tc=29.4 min CN=77 Runoff=19.06 cfs 1.776 af

Subcatchment8: Subarea Runoff Area=26.250 ac 2.70% Impervious Runoff Depth>1.59"
Flow Length=1,580' Slope=0.0100 '/' Tc=27.9 min CN=76 Runoff=38.35 cfs 3.480 af

Pond 1D: Existing Depression Peak Elev=939.00' Storage=1.346 af Inflow=28.30 cfs 1.645 af
Discarded=0.35 cfs 0.335 af Primary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.335 af

Pond 6D: Existing Depression Peak Elev=918.13' Storage=0.766 af Inflow=20.84 cfs 1.623 af
Discarded=0.12 cfs 0.055 af Primary=7.15 cfs 1.433 af Outflow=7.27 cfs 1.488 af

Pond 7D: Existing Depression Peak Elev=918.11' Storage=0.368 af Inflow=21.36 cfs 3.209 af
Discarded=0.06 cfs 0.026 af Primary=17.31 cfs 3.123 af Outflow=17.37 cfs 3.149 af

Link 1L: West Subwatershed Inflow=32.14 cfs 1.980 af
Primary=32.14 cfs 1.980 af

Link 2L: Northwest Subwatershed Inflow=9.64 cfs 0.532 af
Primary=9.64 cfs 0.532 af

Link 3L: North Subwatershed (drainage swale) Inflow=63.01 cfs 4.031 af
Primary=63.01 cfs 4.031 af

Link 4L: Southeast Subwatershed Inflow=52.16 cfs 6.603 af
Primary=52.16 cfs 6.603 af

Total Runoff Area = 109.500 ac Runoff Volume = 15.067 af Average Runoff Depth = 1.65"
99.18% Pervious = 108.600 ac 0.82% Impervious = 0.900 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1: Subarea Runoff Area=11.870 ac 0.00% Impervious Runoff Depth>3.63"
Flow Length=400' Slope=0.0200 '/' Tc=11.7 min CN=77 Runoff=61.73 cfs 3.595 af

Subcatchment2: Subarea Runoff Area=13.690 ac 0.00% Impervious Runoff Depth>3.74"
Flow Length=630' Slope=0.0200 '/' Tc=13.4 min CN=78 Runoff=69.07 cfs 4.262 af

Subcatchment3: Subarea Runoff Area=4.590 ac 0.00% Impervious Runoff Depth>3.24"
Flow Length=630' Slope=0.0400 '/' Tc=9.9 min CN=73 Runoff=22.70 cfs 1.238 af

Subcatchment4: Subarea Runoff Area=1.080 ac 0.00% Impervious Runoff Depth>3.74"
Flow Length=190' Slope=0.0300 '/' Tc=8.6 min CN=78 Runoff=6.50 cfs 0.336 af

Subcatchment5: Subarea Runoff Area=27.960 ac 0.00% Impervious Runoff Depth>3.63"
Flow Length=740' Slope=0.0200 '/' Tc=14.2 min CN=77 Runoff=133.00 cfs 8.467 af

Subcatchment6: Subarea Runoff Area=11.230 ac 1.69% Impervious Runoff Depth>3.73"
Flow Length=760' Tc=21.5 min CN=78 Runoff=45.09 cfs 3.494 af

Subcatchment7: Subarea Runoff Area=12.830 ac 0.00% Impervious Runoff Depth>3.63"
Flow Length=1,725' Slope=0.0100 '/' Tc=29.4 min CN=77 Runoff=42.19 cfs 3.881 af

Subcatchment8: Subarea Runoff Area=26.250 ac 2.70% Impervious Runoff Depth>3.53"
Flow Length=1,580' Slope=0.0100 '/' Tc=27.9 min CN=76 Runoff=86.45 cfs 7.720 af

Pond 1D: Existing Depression Peak Elev=939.53' Storage=2.911 af Inflow=61.73 cfs 3.595 af
Discarded=0.49 cfs 0.489 af Primary=0.65 cfs 0.296 af Outflow=1.14 cfs 0.785 af

Pond 6D: Existing Depression Peak Elev=918.54' Storage=1.692 af Inflow=45.09 cfs 3.494 af
Discarded=0.23 cfs 0.080 af Primary=16.64 cfs 3.261 af Outflow=16.85 cfs 3.340 af

Pond 7D: Existing Depression Peak Elev=918.52' Storage=0.742 af Inflow=48.15 cfs 7.141 af
Discarded=0.08 cfs 0.036 af Primary=39.43 cfs 7.038 af Outflow=39.52 cfs 7.074 af

Link 1L: West Subwatershed Inflow=69.07 cfs 4.557 af
Primary=69.07 cfs 4.557 af

Link 2L: Northwest Subwatershed Inflow=22.70 cfs 1.238 af
Primary=22.70 cfs 1.238 af

Link 3L: North Subwatershed (drainage swale) Inflow=138.65 cfs 8.803 af
Primary=138.65 cfs 8.803 af

Link 4L: Southeast Subwatershed Inflow=119.79 cfs 14.758 af
Primary=119.79 cfs 14.758 af

Total Runoff Area = 109.500 ac Runoff Volume = 32.992 af Average Runoff Depth = 3.62"
99.18% Pervious = 108.600 ac 0.82% Impervious = 0.900 ac

Summary for Subcatchment 1: Subarea

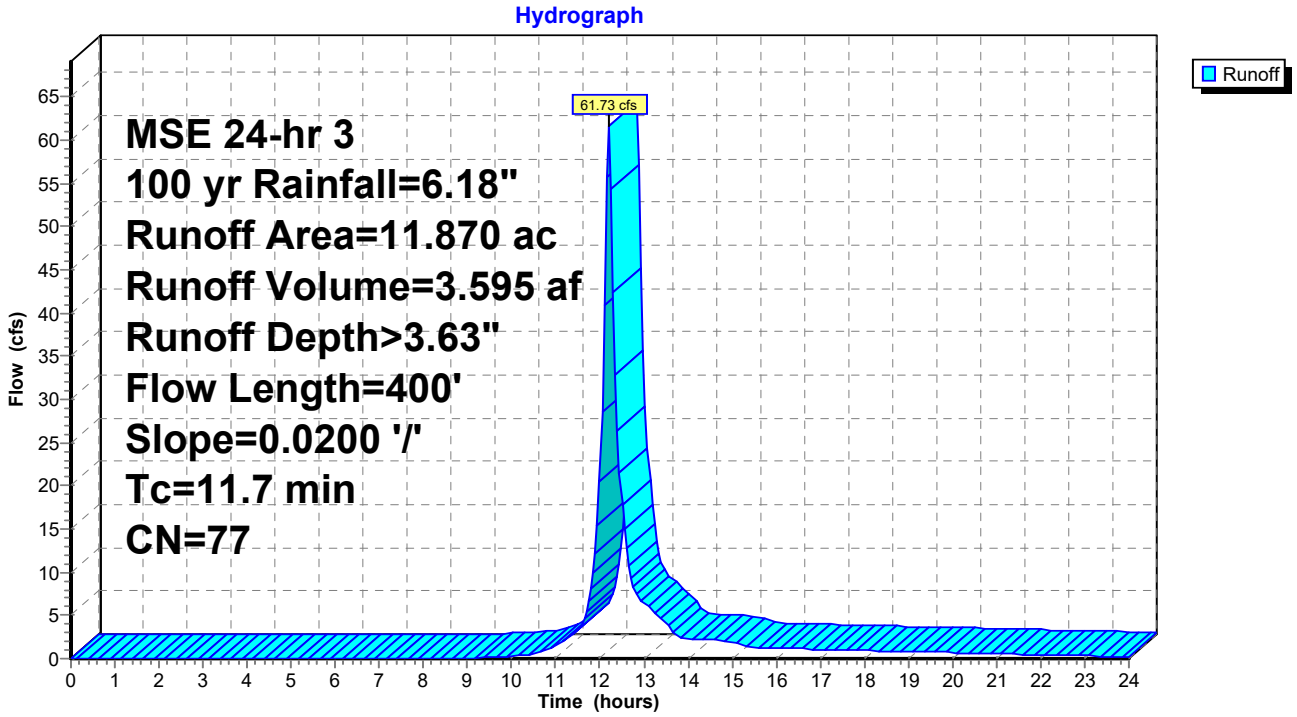
Runoff = 61.73 cfs @ 12.20 hrs, Volume= 3.595 af, Depth> 3.63"
Routed to Pond 1D : Existing Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	10.870	78	cropland - C soils
*	1.000	70	woodland - C soils
	11.870	77	Weighted Average
	11.870		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		**Sheet Flow,** Range n= 0.130 P2= 2.70"
2.2	300	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
11.7	400	Total			

Subcatchment 1: Subarea



Summary for Subcatchment 2: Subarea

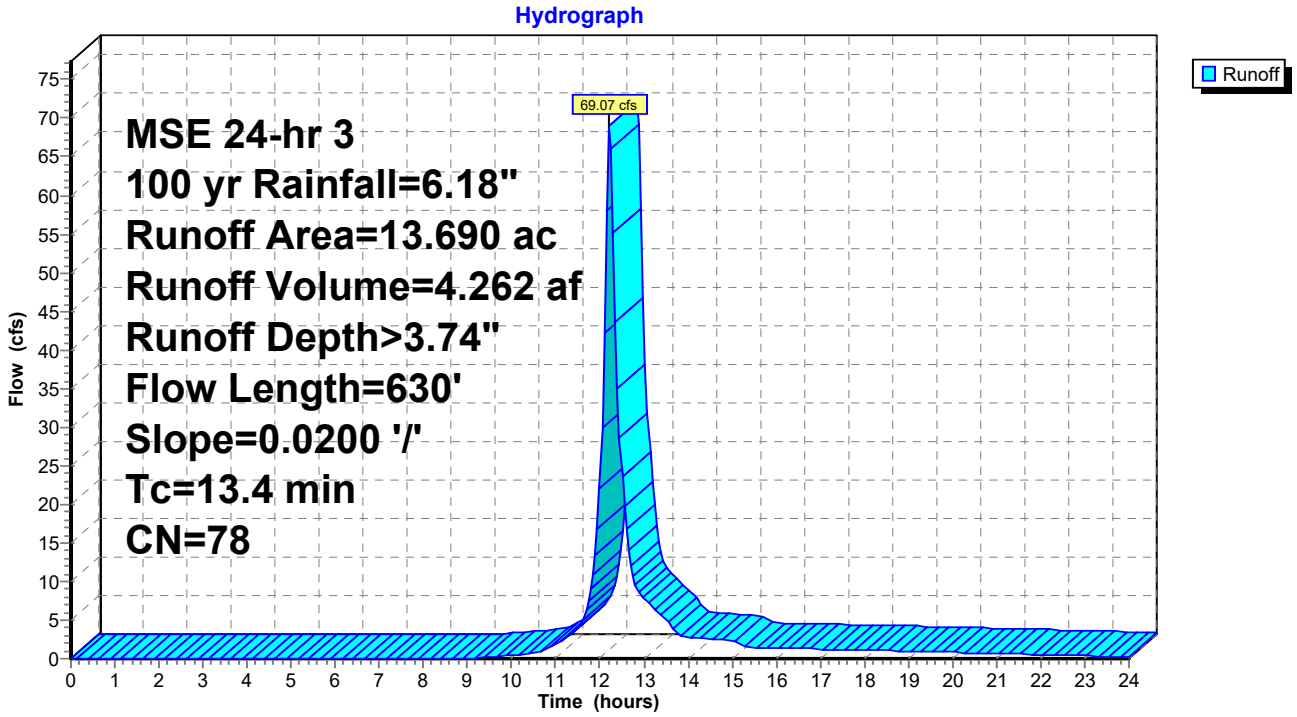
Runoff = 69.07 cfs @ 12.22 hrs, Volume= 4.262 af, Depth> 3.74"
Routed to Link 1L : West Subwatershed

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	13.020	78	cropland - C soils
*	0.670	70	woodland - C soils
	13.690	78	Weighted Average
	13.690		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		**Sheet Flow,** Range n= 0.130 P2= 2.70"
3.9	530	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.4	630	Total			

Subcatchment 2: Subarea



Summary for Subcatchment 3: Subarea

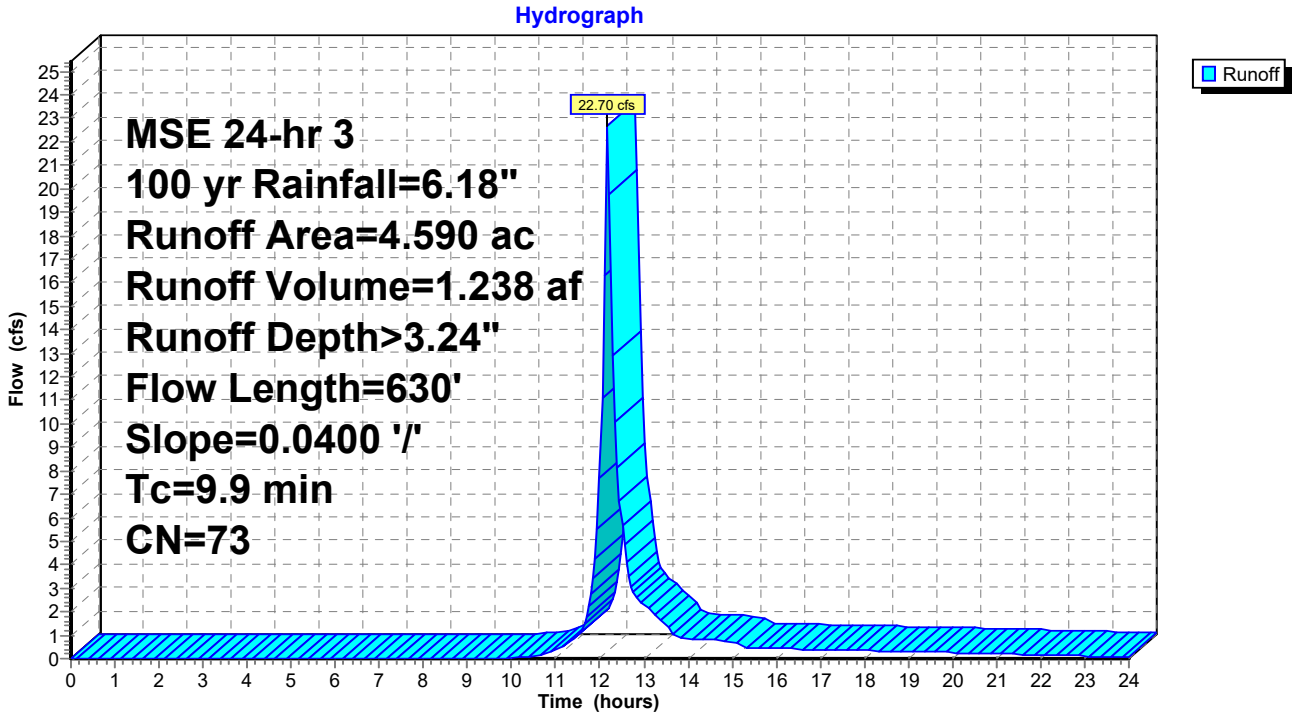
Runoff = 22.70 cfs @ 12.18 hrs, Volume= 1.238 af, Depth> 3.24"
Routed to Link 2L : Northwest Subwatershed

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	1.990	78	cropland - C soils
*	2.600	70	woodland - C soils
	4.590	73	Weighted Average
	4.590		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		**Sheet Flow,** Range n= 0.130 P2= 2.70"
2.7	530	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.9	630	Total			

Subcatchment 3: Subarea



Summary for Subcatchment 4: Subarea

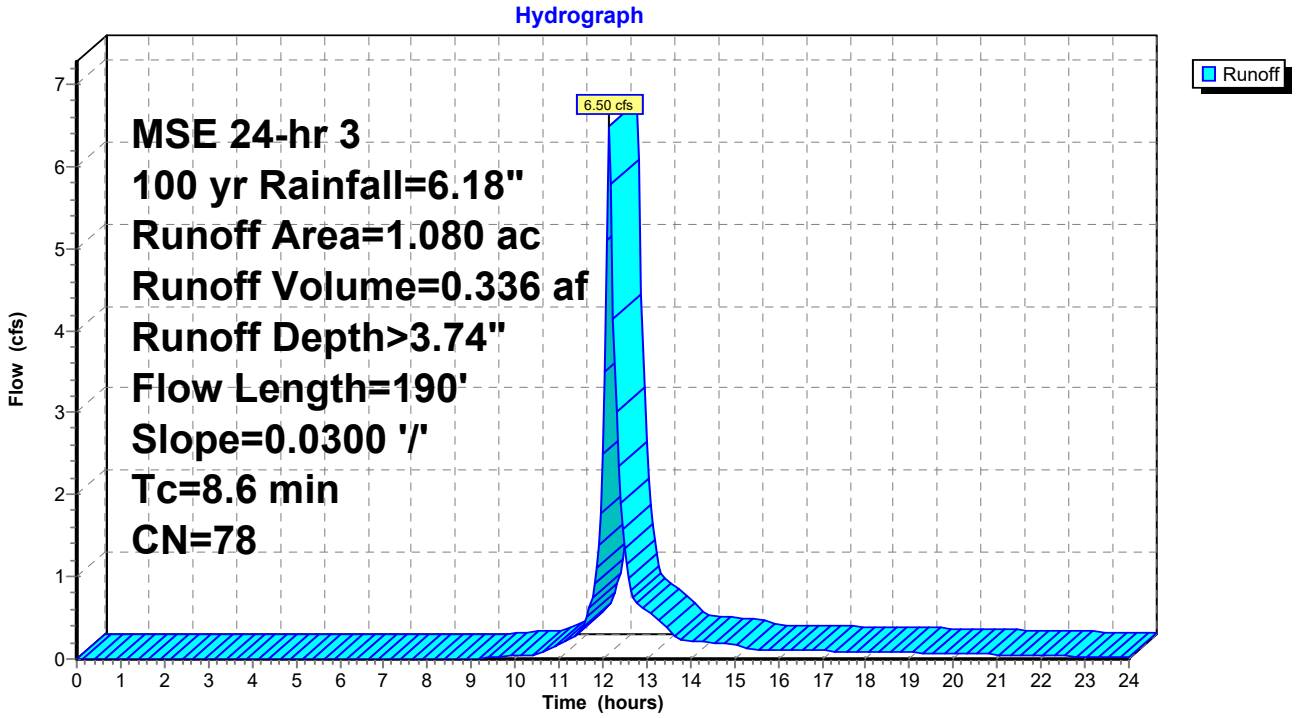
Runoff = 6.50 cfs @ 12.16 hrs, Volume= 0.336 af, Depth> 3.74"
Routed to Link 3L : North Subwatershed (drainage swale)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	1.080	78	cropland - C soils
	1.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.1	100	0.0300	0.21		**Sheet Flow,** Range n= 0.130 P2= 2.70"
0.5	90	0.0300	2.79		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
8.6	190	Total			

Subcatchment 4: Subarea



Summary for Subcatchment 5: Subarea

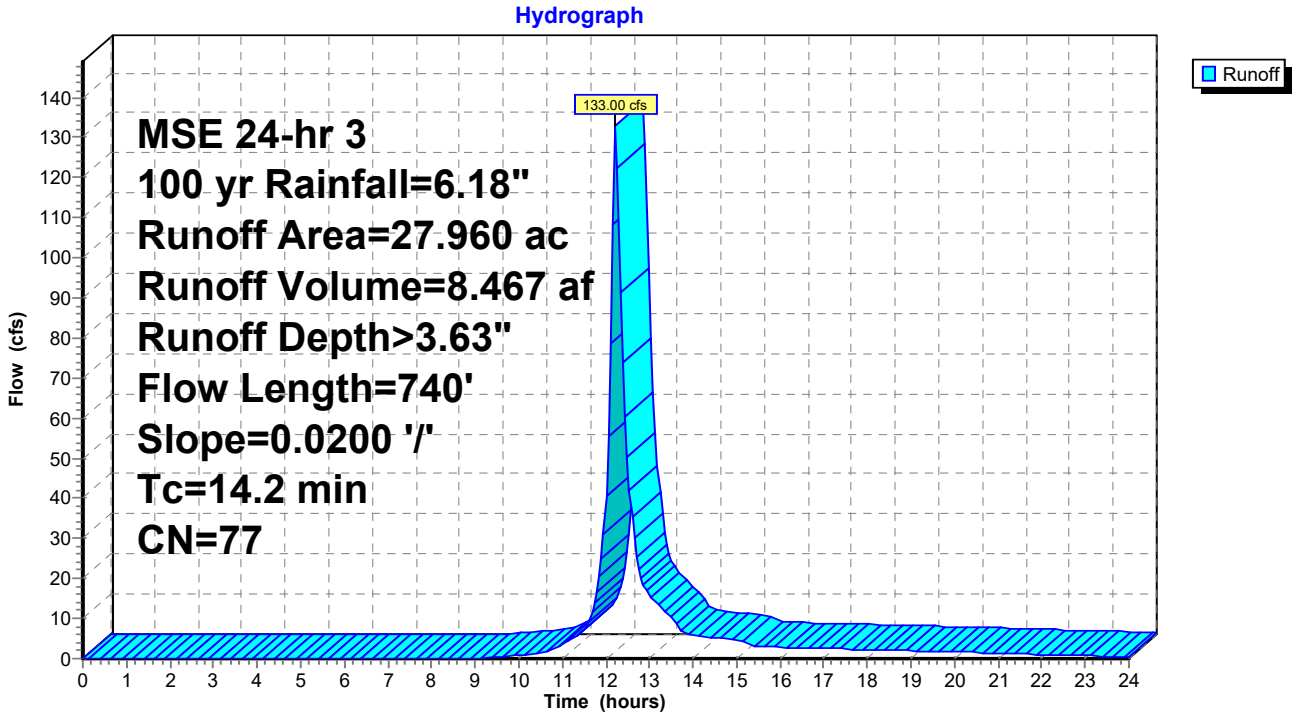
Runoff = 133.00 cfs @ 12.23 hrs, Volume= 8.467 af, Depth> 3.63"
Routed to Link 3L : North Subwatershed (drainage swale)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	24.440	78	cropland - C soils
*	3.520	70	woodland - C soils
	27.960	77	Weighted Average
	27.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0200	0.18		**Sheet Flow,** Range n= 0.130 P2= 2.70"
4.7	640	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
14.2	740	Total			

Subcatchment 5: Subarea



Summary for Subcatchment 6: Subarea

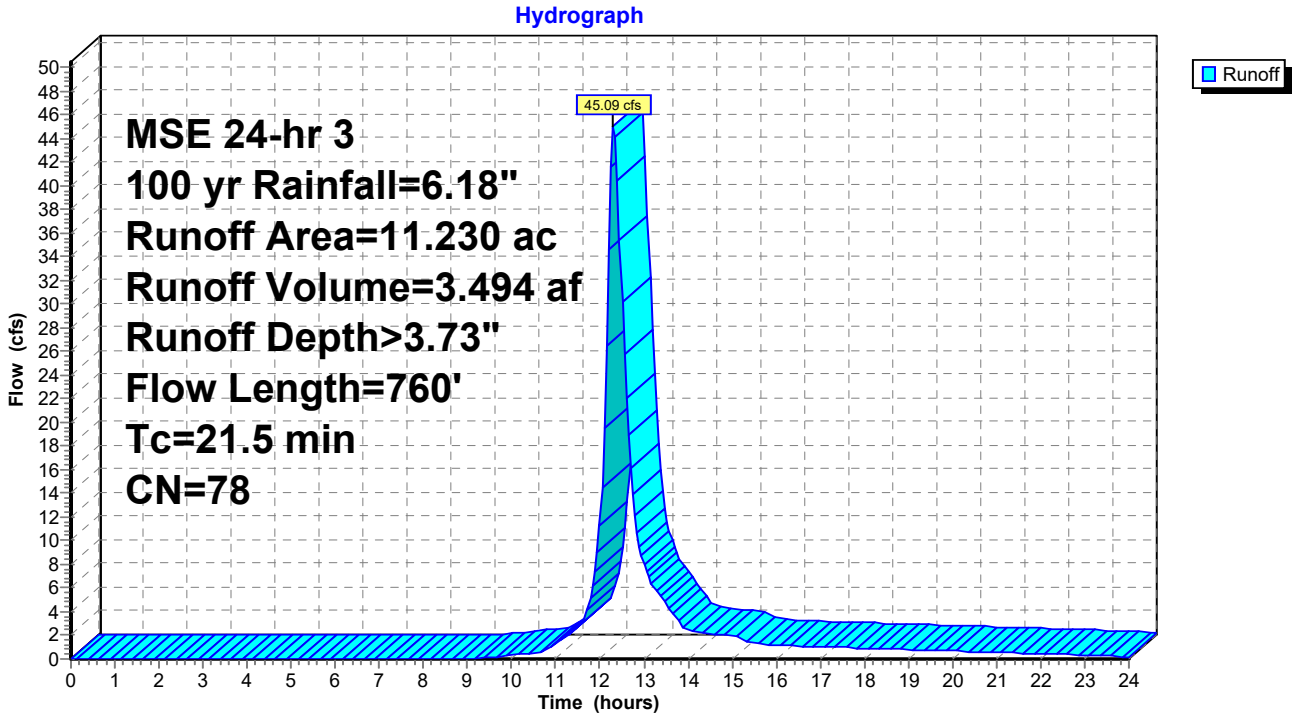
Runoff = 45.09 cfs @ 12.32 hrs, Volume= 3.494 af, Depth> 3.73"
Routed to Pond 6D : Existing Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	9.920	78	cropland - C soils
*	0.710	70	woodland - C soils
*	0.190	98	offsite road
*	0.410	74	offsite lawn (ROW) - C soils
	11.230	78	Weighted Average
	11.040		98.31% Pervious Area
	0.190		1.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0100	0.13		**Sheet Flow,** Range n= 0.130 P2= 2.70"
2.0	190	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.9	470	0.0050	1.14		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
21.5	760	Total			

Subcatchment 6: Subarea



Summary for Subcatchment 7: Subarea

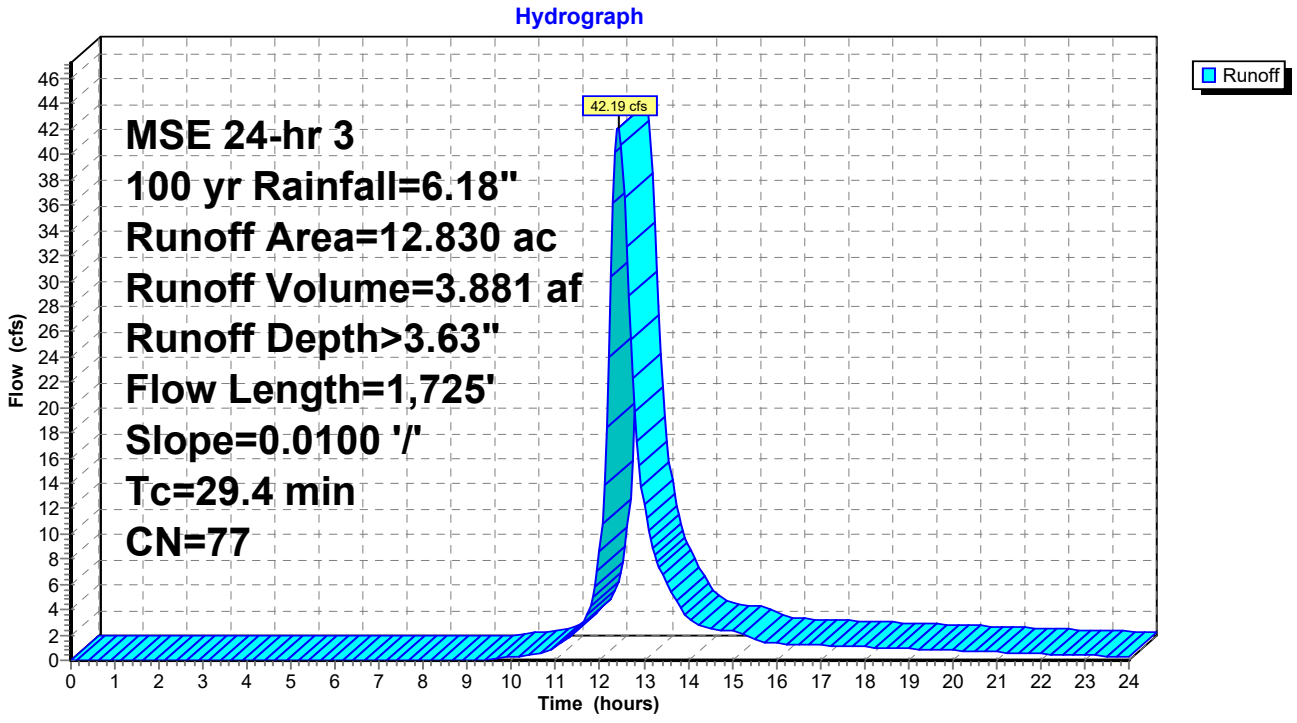
Runoff = 42.19 cfs @ 12.42 hrs, Volume= 3.881 af, Depth> 3.63"
Routed to Pond 7D : Existing Depression

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	10.880	78	cropland - C soils
*	1.750	70	woodland - C soils
*	0.200	74	offsite lawn (ROW) - C soils
	12.830	77	Weighted Average
	12.830		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0100	0.13		**Sheet Flow,** Range n= 0.130 P2= 2.70"
16.8	1,625	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
29.4	1,725	Total			

Subcatchment 7: Subarea



Summary for Subcatchment 8: Subarea

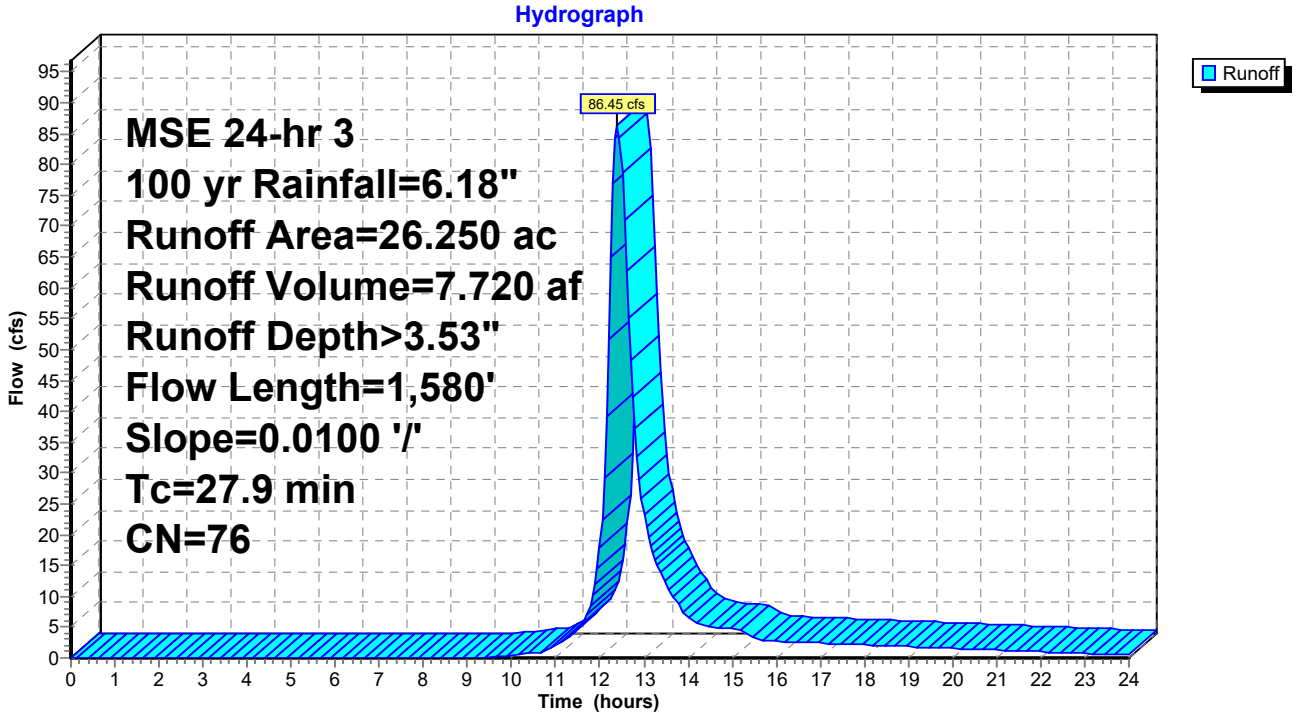
Runoff = 86.45 cfs @ 12.40 hrs, Volume= 7.720 af, Depth> 3.53"
Routed to Link 4L : Southeast Subwatershed

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	16.290	78	cropland - C soils
*	5.110	70	woodland - C soils
*	4.140	74	maintained lawn - C soils
*	0.710	98	impervious
	26.250	76	Weighted Average
	25.540		97.30% Pervious Area
	0.710		2.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	100	0.0100	0.13		**Sheet Flow,** Range n= 0.130 P2= 2.70"
15.3	1,480	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
27.9	1,580	Total			

Subcatchment 8: Subarea



Summary for Pond 1D: Existing Depression

Inflow Area = 11.870 ac, 0.00% Impervious, Inflow Depth > 3.63" for 100 yr event
Inflow = 61.73 cfs @ 12.20 hrs, Volume= 3.595 af
Outflow = 1.14 cfs @ 16.45 hrs, Volume= 0.785 af, Atten= 98%, Lag= 255.3 min
Discarded = 0.49 cfs @ 16.45 hrs, Volume= 0.489 af
Primary = 0.65 cfs @ 16.45 hrs, Volume= 0.296 af
Routed to Link 1L : West Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 939.53' @ 16.45 hrs Surf.Area= 3.442 ac Storage= 2.911 af

Plug-Flow detention time= 371.6 min calculated for 0.783 af (22% of inflow)
Center-of-Mass det. time= 272.0 min (1,075.4 - 803.4)

Volume	Invert	Avail.Storage	Storage Description
#1	938.00'	4.745 af	**Custom Stage Data (Conic)** Listed below (Recalc)

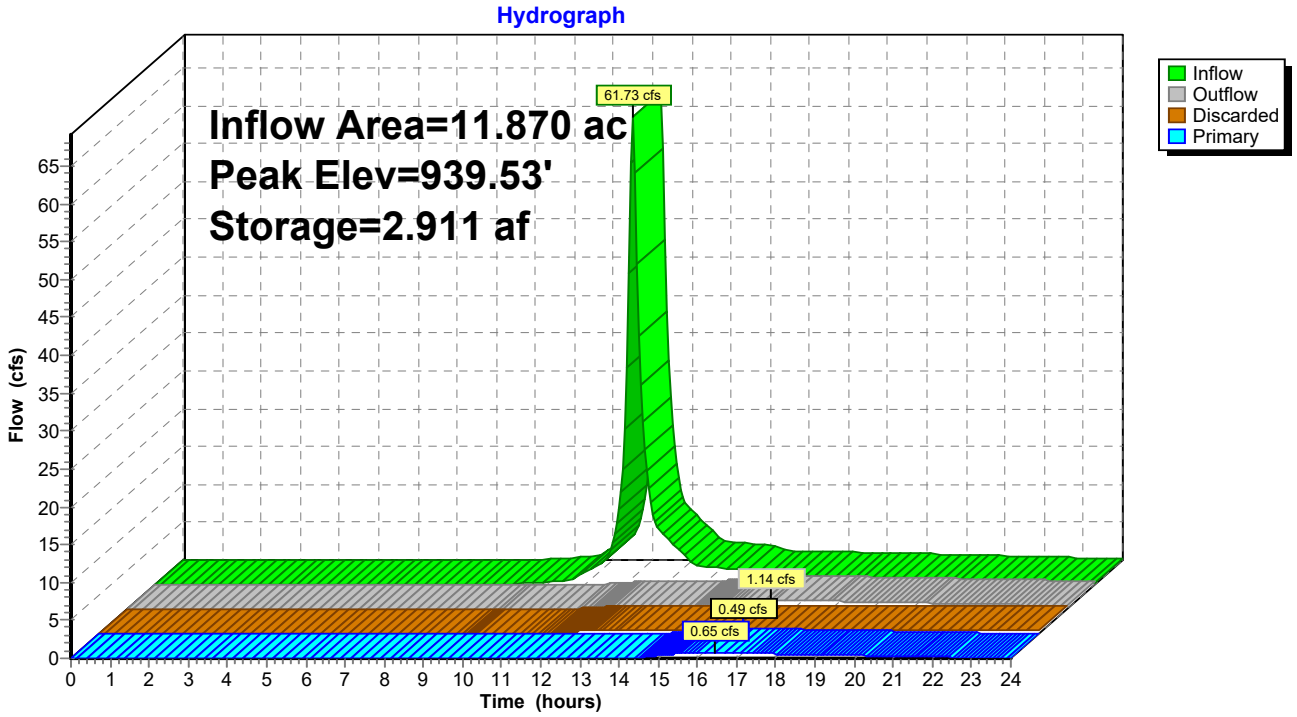
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
938.00	0.440	0.000	0.000	0.440
939.00	2.520	1.338	1.338	2.520
940.00	4.380	3.407	4.745	4.380

Device	Routing	Invert	Outlet Devices
#1	Discarded	938.00'	**0.130 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 928.00' Phase-In= 0.01'
#2	Primary	939.50'	**50.0' long + 10.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.49 cfs @ 16.45 hrs HW=939.53' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.49 cfs)

Primary OutFlow Max=0.65 cfs @ 16.45 hrs HW=939.53' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.65 cfs @ 0.43 fps)

Pond 1D: Existing Depression



Summary for Pond 6D: Existing Depression

Inflow Area = 11.230 ac, 1.69% Impervious, Inflow Depth > 3.73" for 100 yr event
Inflow = 45.09 cfs @ 12.32 hrs, Volume= 3.494 af
Outflow = 16.85 cfs @ 13.07 hrs, Volume= 3.340 af, Atten= 63%, Lag= 45.0 min
Discarded = 0.23 cfs @ 12.76 hrs, Volume= 0.080 af
Primary = 16.64 cfs @ 13.07 hrs, Volume= 3.261 af
Routed to Pond 7D : Existing Depression

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 918.54' @ 12.76 hrs Surf.Area= 2.945 ac Storage= 1.692 af

Plug-Flow detention time= 87.8 min calculated for 3.340 af (96% of inflow)
Center-of-Mass det. time= 65.6 min (875.9 - 810.3)

Volume	Invert	Avail.Storage	Storage Description
#1	916.90'	3.474 af	**Custom Stage Data (Conic)** Listed below (Recalc)

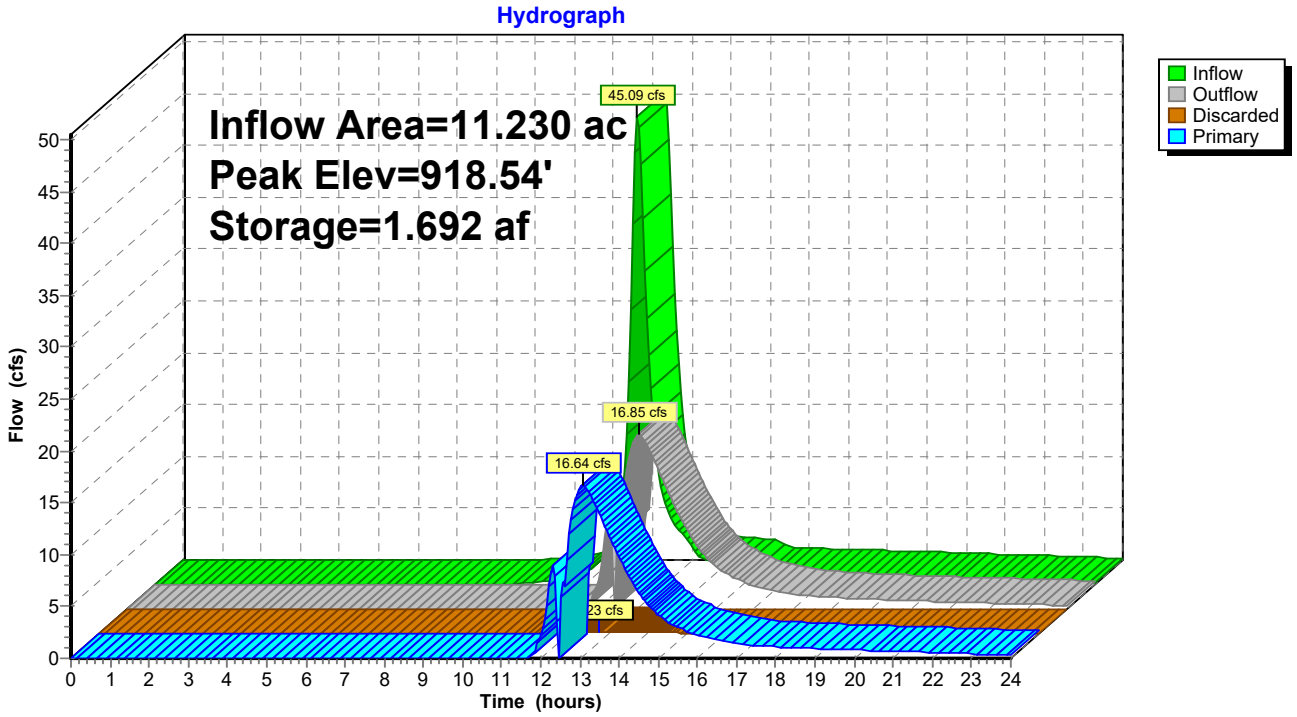
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
916.90	0.000	0.000	0.000	0.000
917.00	0.110	0.004	0.004	0.110
918.00	1.260	0.581	0.584	1.260
919.00	4.920	2.890	3.474	4.920

Device	Routing	Invert	Outlet Devices
#1	Discarded	916.90'	**0.070 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 911.00' Phase-In= 0.01'
#2	Primary	917.40'	**8.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.23 cfs @ 12.76 hrs HW=918.54' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.23 cfs)

Primary OutFlow Max=18.05 cfs @ 13.07 hrs HW=918.49' TW=918.39' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 18.05 cfs @ 1.24 fps)

Pond 6D: Existing Depression



Summary for Pond 7D: Existing Depression

[80] Warning: Exceeded Pond 6D by 0.14' @ 11.10 hrs (0.28 cfs 0.500 af)

Inflow Area = 24.060 ac, 0.79% Impervious, Inflow Depth > 3.56" for 100 yr event
Inflow = 48.15 cfs @ 12.35 hrs, Volume= 7.141 af
Outflow = 39.52 cfs @ 12.62 hrs, Volume= 7.074 af, Atten= 18%, Lag= 15.9 min
Discarded = 0.08 cfs @ 12.62 hrs, Volume= 0.036 af
Primary = 39.43 cfs @ 12.62 hrs, Volume= 7.038 af
Routed to Link 4L : Southeast Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 918.52' @ 12.62 hrs Surf.Area= 1.091 ac Storage= 0.742 af

Plug-Flow detention time= 19.2 min calculated for 7.060 af (99% of inflow)
Center-of-Mass det. time= 14.1 min (858.1 - 844.1)

Volume	Invert	Avail.Storage	Storage Description
#1	916.90'	1.386 af	**Custom Stage Data (Conic)** Listed below (Recalc)

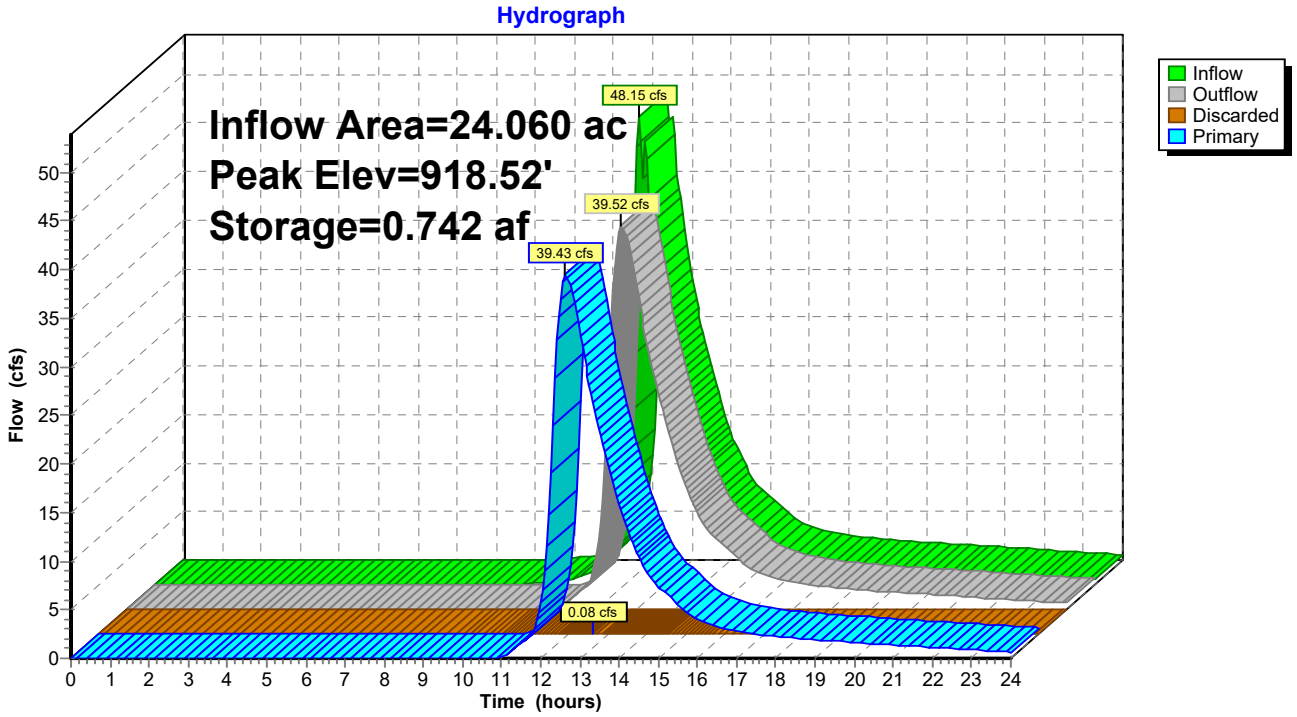
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
916.90	0.000	0.000	0.000	0.000
917.00	0.040	0.001	0.001	0.040
918.00	0.670	0.291	0.293	0.670
919.00	1.580	1.093	1.386	1.580

Device	Routing	Invert	Outlet Devices
#1	Discarded	916.90'	**0.070 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 911.00' Phase-In= 0.01'
#2	Primary	917.40'	**8.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.08 cfs @ 12.62 hrs HW=918.51' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.08 cfs)

Primary OutFlow Max=39.35 cfs @ 12.62 hrs HW=918.51' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 39.35 cfs @ 2.60 fps)

Pond 7D: Existing Depression

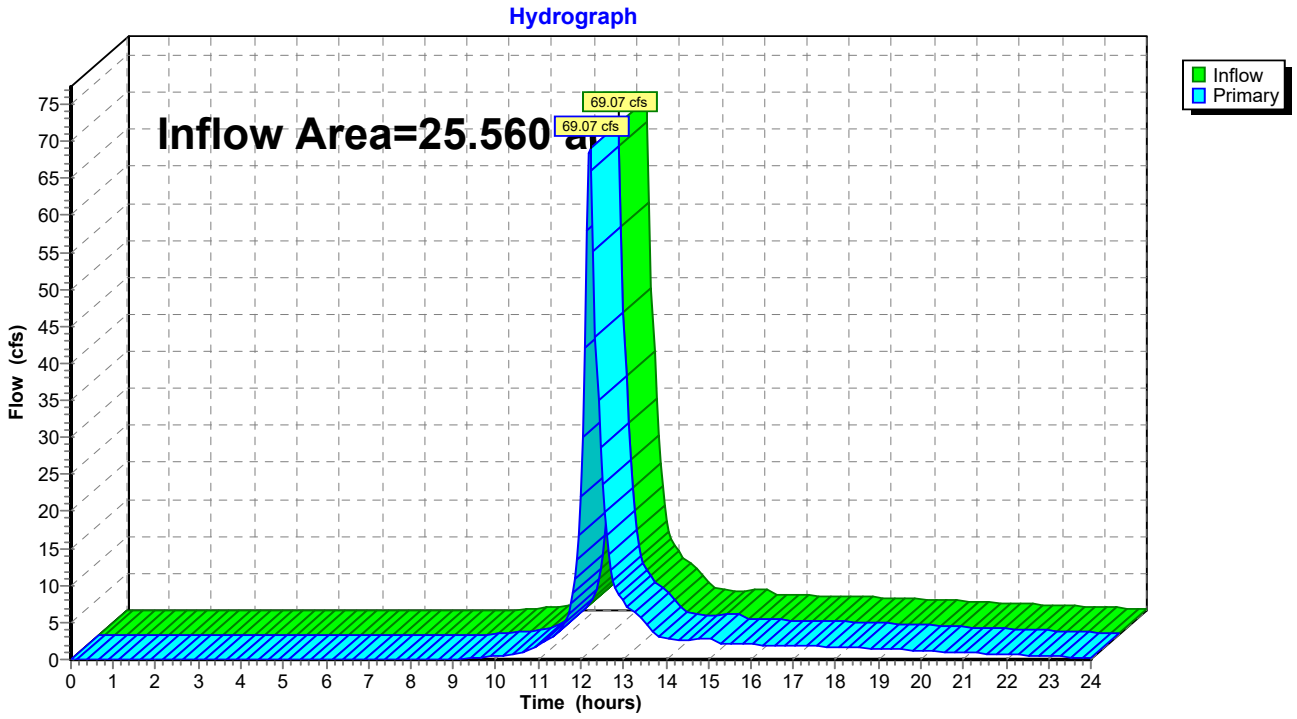


Summary for Link 1L: West Subwatershed

Inflow Area = 25.560 ac, 0.00% Impervious, Inflow Depth > 2.14" for 100 yr event
Inflow = 69.07 cfs @ 12.22 hrs, Volume= 4.557 af
Primary = 69.07 cfs @ 12.22 hrs, Volume= 4.557 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 99L

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: West Subwatershed

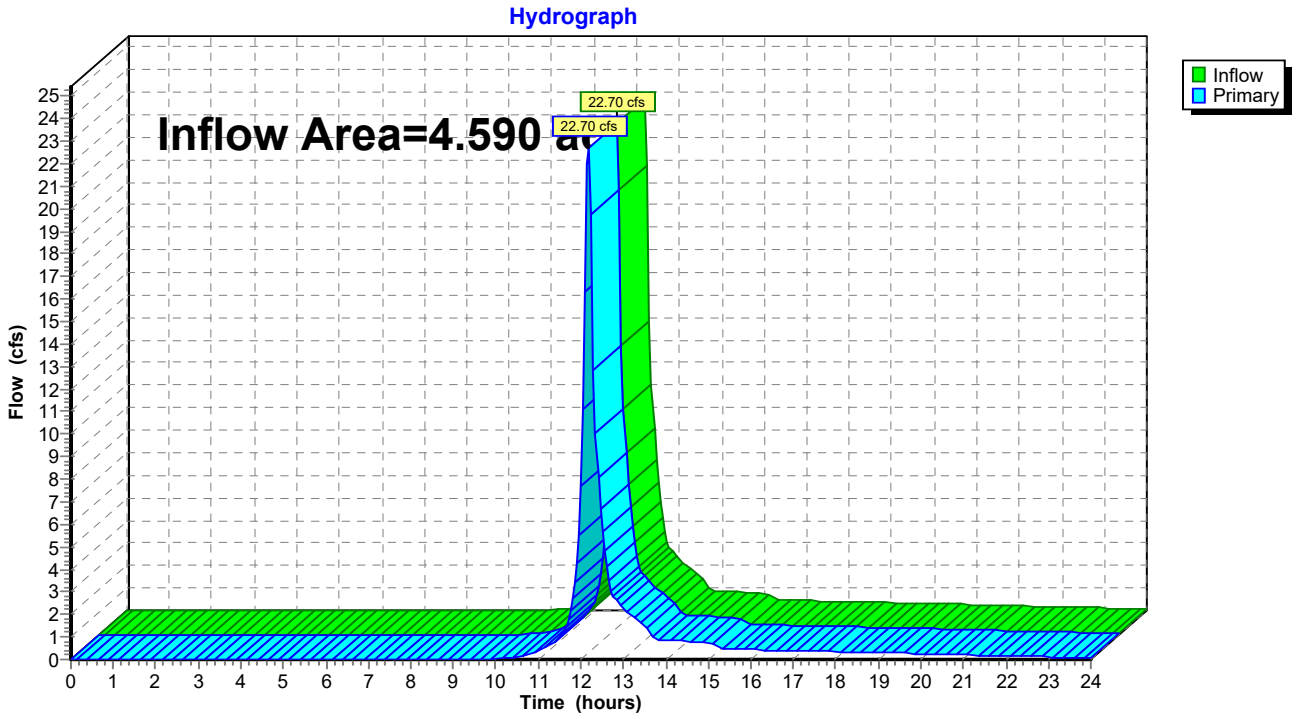


Summary for Link 2L: Northwest Subwatershed

Inflow Area = 4.590 ac, 0.00% Impervious, Inflow Depth > 3.24" for 100 yr event
Inflow = 22.70 cfs @ 12.18 hrs, Volume= 1.238 af
Primary = 22.70 cfs @ 12.18 hrs, Volume= 1.238 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 99L

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: Northwest Subwatershed

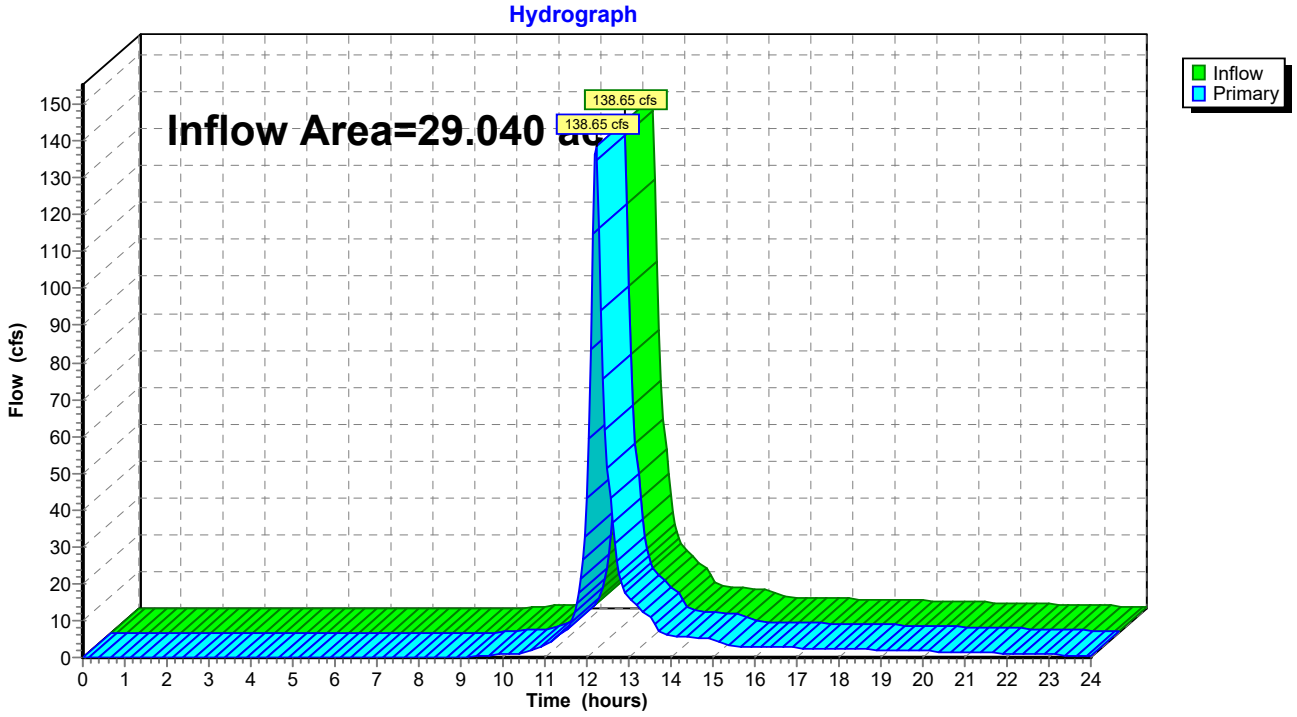


Summary for Link 3L: North Subwatershed (drainage swale)

Inflow Area = 29.040 ac, 0.00% Impervious, Inflow Depth > 3.64" for 100 yr event
Inflow = 138.65 cfs @ 12.22 hrs, Volume= 8.803 af
Primary = 138.65 cfs @ 12.22 hrs, Volume= 8.803 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 99L

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 3L: North Subwatershed (drainage swale)

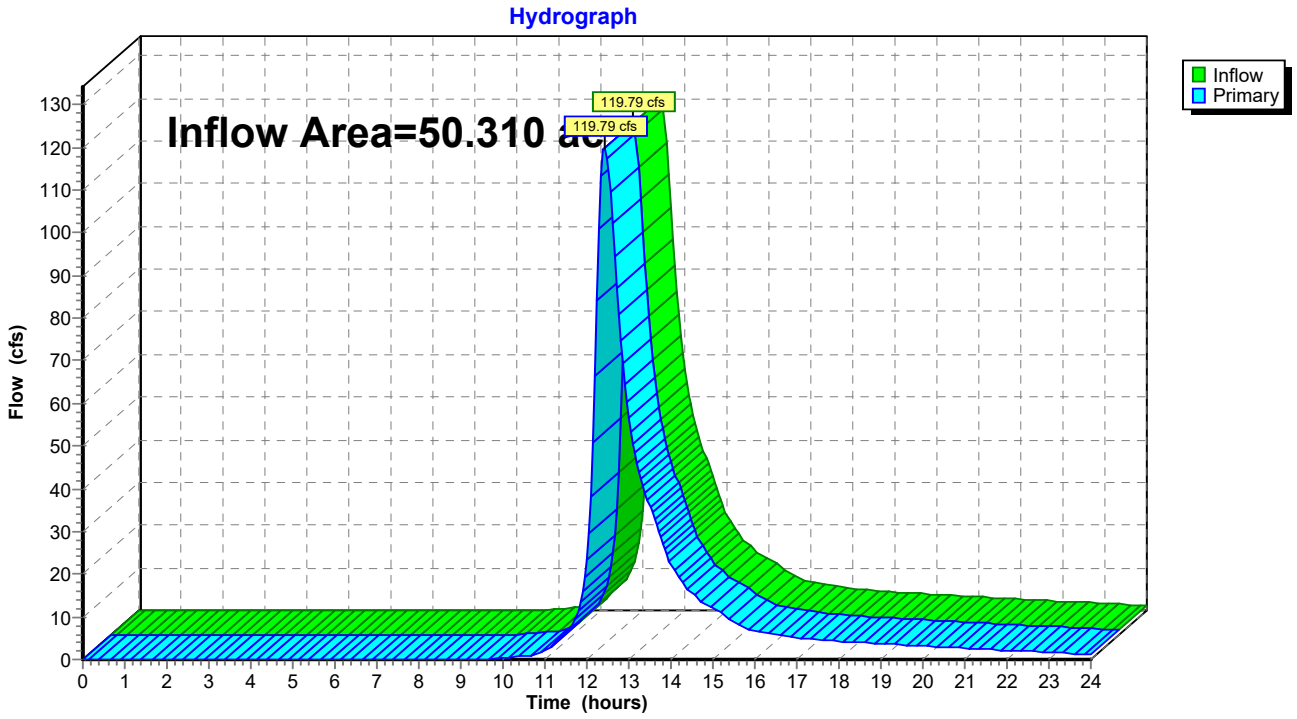


Summary for Link 4L: Southeast Subwatershed

Inflow Area = 50.310 ac, 1.79% Impervious, Inflow Depth > 3.52" for 100 yr event
Inflow = 119.79 cfs @ 12.43 hrs, Volume= 14.758 af
Primary = 119.79 cfs @ 12.43 hrs, Volume= 14.758 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 99L

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Southeast Subwatershed



Events for Subcatchment 1: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	10.95	0.670	0.68
2 yr	2.70	14.33	0.858	0.87
10 yr	3.81	28.30	1.645	1.66
100 yr	**6.18**	**61.73**	**3.595**	**3.63**

Events for Subcatchment 2: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	12.71	0.825	0.72
2 yr	2.70	16.47	1.049	0.92
10 yr	3.81	32.14	1.980	1.74
100 yr	**6.18**	**69.07**	**4.262**	**3.74**

Events for Subcatchment 3: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	3.22	0.197	0.51
2 yr	2.70	4.43	0.260	0.68
10 yr	3.81	9.64	0.532	1.39
100 yr	**6.18**	**22.70**	**1.238**	**3.24**

Events for Subcatchment 4: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	1.22	0.065	0.72
2 yr	2.70	1.58	0.083	0.92
10 yr	3.81	3.04	0.156	1.74
100 yr	**6.18**	**6.50**	**0.336**	**3.74**

Events for Subcatchment 5: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	23.40	1.579	0.68
2 yr	2.70	30.68	2.022	0.87
10 yr	3.81	60.75	3.875	1.66
100 yr	**6.18**	**133.00**	**8.467**	**3.63**

Events for Subcatchment 6: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	8.19	0.676	0.72
2 yr	2.70	10.65	0.860	0.92
10 yr	3.81	20.84	1.623	1.73
100 yr	**6.18**	**45.09**	**3.494**	**3.73**

Events for Subcatchment 7: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	7.24	0.723	0.68
2 yr	2.70	9.53	0.926	0.87
10 yr	3.81	19.06	1.776	1.66
100 yr	**6.18**	**42.19**	**3.881**	**3.63**

Events for Subcatchment 8: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	14.05	1.385	0.63
2 yr	2.70	18.71	1.786	0.82
10 yr	3.81	38.35	3.480	1.59
100 yr	**6.18**	**86.45**	**7.720**	**3.53**

Events for Pond 1D: Existing Depression

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	10.95	0.19	0.19	0.00	938.58	0.510
2 yr	14.33	0.23	0.23	0.00	938.68	0.669
10 yr	28.30	0.35	0.35	0.00	939.00	1.346
100 yr	**61.73**	**1.14**	**0.49**	**0.65**	**939.53**	**2.911**

Events for Pond 6D: Existing Depression

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	8.19	2.22	0.07	2.16	917.77	0.339
2 yr	10.65	3.17	0.08	3.09	917.86	0.423
10 yr	20.84	7.27	0.12	7.15	918.13	0.766
100 yr	**45.09**	**16.85**	**0.23**	**16.64**	**918.54**	**1.692**

Events for Pond 7D: Existing Depression

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	7.24	5.17	0.03	5.13	917.76	0.158
2 yr	9.53	7.53	0.04	7.49	917.84	0.200
10 yr	21.36	17.37	0.06	17.31	918.11	0.368
100 yr	**48.15**	**39.52**	**0.08**	**39.43**	**918.52**	**0.742**

Events for Link 1L: West Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1 yr	12.71	12.71	**0.00**
2 yr	16.47	16.47	0.00
10 yr	32.14	32.14	0.00
100 yr	**69.07**	**69.07**	0.00

Events for Link 2L: Northwest Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1 yr	3.22	3.22	**0.00**
2 yr	4.43	4.43	0.00
10 yr	9.64	9.64	0.00
100 yr	**22.70**	**22.70**	0.00

Events for Link 3L: North Subwatershed (drainage swale)

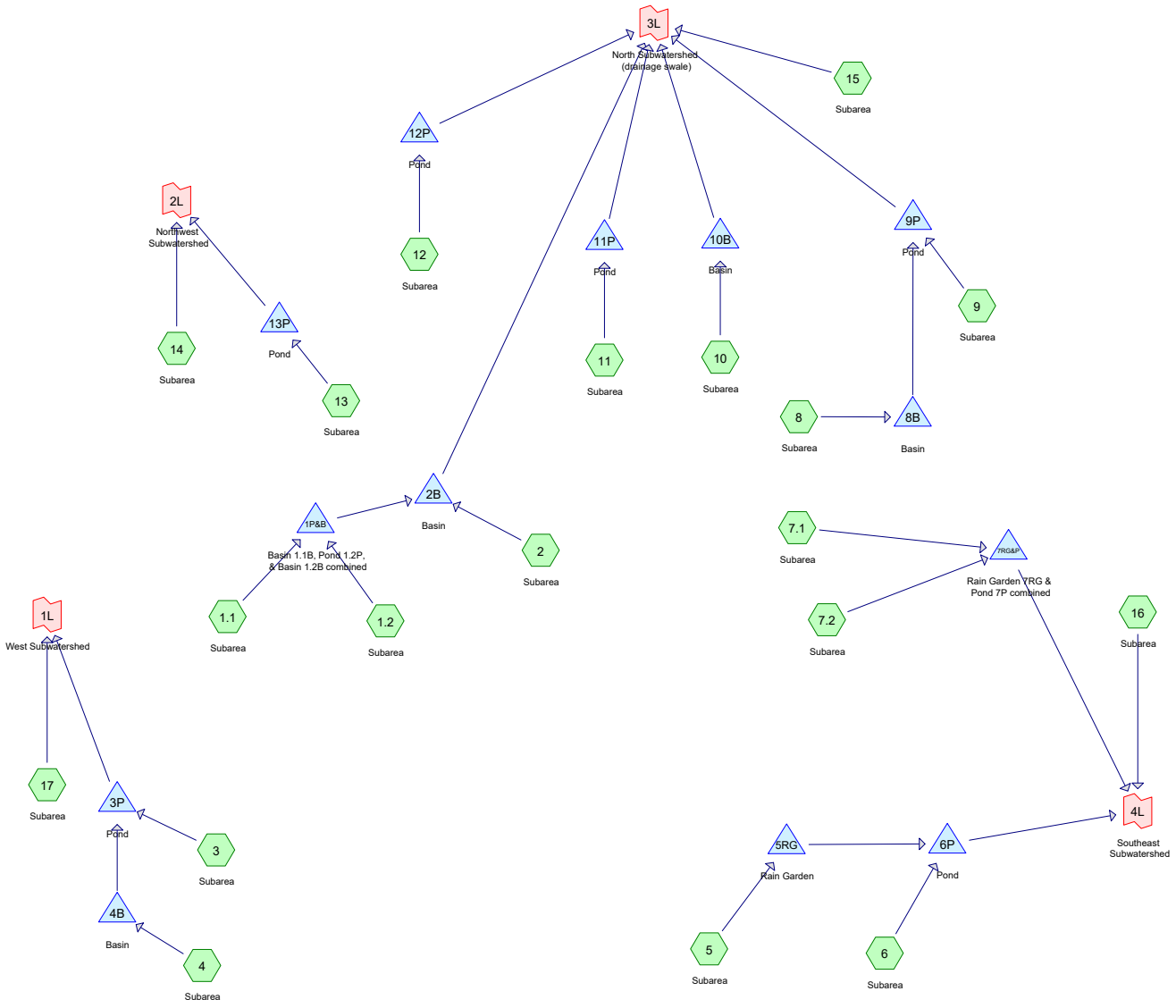
Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1 yr	24.29	24.29	**0.00**
2 yr	31.83	31.83	0.00
10 yr	63.01	63.01	0.00
100 yr	**138.65**	**138.65**	0.00

Events for Link 4L: Southeast Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1 yr	17.49	17.49	**0.00**
2 yr	23.93	23.93	0.00
10 yr	52.16	52.16	0.00
100 yr	**119.79**	**119.79**	0.00

APPENDIX B

Post-Development Hydrologic Analysis



Subcat Reach Pond Link

Routing Diagram for Proposed_2023-003
Prepared by Sound Stormwater Design, Printed 4/4/2024
HydroCAD® 10.20-4b s/n 11025 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1 yr	MSE 24-hr	3	Default	24.00	1	2.40	2
2	2 yr	MSE 24-hr	3	Default	24.00	1	2.70	2
3	10 yr	MSE 24-hr	3	Default	24.00	1	3.81	2
4	100 yr	MSE 24-hr	3	Default	24.00	1	6.18	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
28.990	98	impervious (1.1, 1.2, 2, 3, 4, 5, 6, 7.1, 7.2, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17)
45.890	74	lawn - C (1.1, 1.2, 2, 3, 4, 5, 6, 7.1, 7.2, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17)
25.630	71	meadow - C (1.1, 1.2, 2, 3, 4, 5, 6, 7.1, 7.2, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17)
0.510	74	offsite lawn (ROW) - C (16)
0.290	98	offsite road (16)
1.660	98	water (1.2, 3, 6, 7.2, 9, 11, 12, 13)
6.530	70	woods - C (1.1, 1.2, 6, 7.1, 7.2, 8, 9, 10, 11, 12, 13, 14, 15, 16)
109.500	**80**	**TOTAL AREA**

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1: Subarea Runoff Area=2.180 ac 15.14% Impervious Runoff Depth>0.63"
Flow Length=150' Tc=13.6 min CN=76 Runoff=1.72 cfs 0.115 af

Subcatchment1.2: Subarea Runoff Area=10.240 ac 35.25% Impervious Runoff Depth>0.92"
Flow Length=100' Slope=0.0200 '/' Tc=15.5 min CN=82 Runoff=11.78 cfs 0.789 af

Subcatchment2: Subarea Runoff Area=1.880 ac 56.38% Impervious Runoff Depth>1.23"
Flow Length=275' Tc=8.4 min CN=87 Runoff=3.78 cfs 0.192 af

Subcatchment3: Subarea Runoff Area=11.090 ac 44.82% Impervious Runoff Depth>1.04"
Flow Length=190' Tc=13.9 min CN=84 Runoff=15.18 cfs 0.959 af

Subcatchment4: Subarea Runoff Area=4.910 ac 11.81% Impervious Runoff Depth>0.59"
Flow Length=80' Slope=0.0200 '/' Tc=13.0 min CN=75 Runoff=3.62 cfs 0.242 af

Subcatchment5: Subarea Runoff Area=2.430 ac 11.93% Impervious Runoff Depth>0.59"
Flow Length=200' Slope=0.0100 '/' Tc=21.5 min CN=75 Runoff=1.38 cfs 0.120 af

Subcatchment6: Subarea Runoff Area=8.820 ac 35.60% Impervious Runoff Depth>0.87"
Flow Length=2,040' Tc=22.3 min CN=81 Runoff=7.86 cfs 0.640 af

Subcatchment7.1: Subarea Runoff Area=4.910 ac 13.65% Impervious Runoff Depth>0.63"
Flow Length=550' Tc=20.2 min CN=76 Runoff=3.15 cfs 0.259 af

Subcatchment7.2: Subarea Runoff Area=6.660 ac 32.13% Impervious Runoff Depth>0.87"
Flow Length=650' Slope=0.0100 '/' Tc=19.7 min CN=81 Runoff=6.35 cfs 0.483 af

Subcatchment8: Subarea Runoff Area=5.090 ac 15.13% Impervious Runoff Depth>0.63"
Flow Length=445' Tc=13.1 min CN=76 Runoff=4.07 cfs 0.269 af

Subcatchment9: Subarea Runoff Area=10.750 ac 37.12% Impervious Runoff Depth>0.98"
Flow Length=1,290' Slope=0.0200 '/' Tc=19.0 min CN=83 Runoff=11.90 cfs 0.877 af

Subcatchment10: Subarea Runoff Area=1.750 ac 13.71% Impervious Runoff Depth>0.63"
Flow Length=100' Slope=0.0200 '/' Tc=15.5 min CN=76 Runoff=1.30 cfs 0.092 af

Subcatchment11: Subarea Runoff Area=7.440 ac 43.01% Impervious Runoff Depth>1.04"
Flow Length=1,315' Tc=15.0 min CN=84 Runoff=9.92 cfs 0.643 af

Subcatchment12: Subarea Runoff Area=6.970 ac 29.12% Impervious Runoff Depth>0.82"
Flow Length=540' Tc=14.7 min CN=80 Runoff=7.18 cfs 0.476 af

Subcatchment13: Subarea Runoff Area=3.930 ac 30.79% Impervious Runoff Depth>0.87"
Flow Length=190' Slope=0.0500 '/' Tc=11.2 min CN=81 Runoff=4.94 cfs 0.285 af

Subcatchment14: Subarea Runoff Area=1.740 ac 7.47% Impervious Runoff Depth>0.59"
Flow Length=65' Slope=0.0100 '/' Tc=14.5 min CN=75 Runoff=1.22 cfs 0.086 af

Subcatchment15: Subarea Runoff Area=4.060 ac 17.73% Impervious Runoff Depth>0.68"
Flow Length=80' Slope=0.0300 '/' Tc=11.0 min CN=77 Runoff=3.87 cfs 0.229 af

Subcatchment16: Subarea Runoff Area=11.680 ac 11.13% Impervious Runoff Depth>0.59"
Flow Length=505' Tc=13.3 min CN=75 Runoff=8.52 cfs 0.576 af

Subcatchment17: Subarea Runoff Area=2.970 ac 18.86% Impervious Runoff Depth>0.68"
Flow Length=115' Slope=0.0700 '/' Tc=9.5 min CN=77 Runoff=2.96 cfs 0.168 af

Pond 1P&B: Basin 1.1B, Pond 1.2P, & Peak Elev=935.45' Storage=0.562 af Inflow=13.49 cfs 0.904 af
Discarded=0.08 cfs 0.078 af Primary=0.67 cfs 0.520 af Outflow=0.75 cfs 0.598 af

Pond 2B: Basin Peak Elev=933.68' Storage=0.024 af Inflow=3.78 cfs 0.712 af
Discarded=0.06 cfs 0.056 af Primary=3.56 cfs 0.645 af Outflow=3.63 cfs 0.700 af

Pond 3P: Pond Peak Elev=929.57' Storage=0.696 af Inflow=15.18 cfs 0.959 af
Outflow=0.43 cfs 0.365 af

Pond 4B: Basin Peak Elev=936.29' Storage=0.067 af Inflow=3.62 cfs 0.242 af
Discarded=0.95 cfs 0.242 af Primary=0.00 cfs 0.000 af Outflow=0.95 cfs 0.242 af

Pond 5RG: Rain Garden Peak Elev=926.21' Storage=0.081 af Inflow=1.38 cfs 0.120 af
Discarded=0.01 cfs 0.008 af Primary=0.07 cfs 0.042 af Outflow=0.08 cfs 0.050 af

Pond 6P: Pond Peak Elev=916.27' Storage=0.443 af Inflow=7.86 cfs 0.681 af
Outflow=0.35 cfs 0.325 af

Pond 7RG&P: Rain Garden 7RG & Pond 7P Peak Elev=921.77' Storage=0.500 af Inflow=9.49 cfs 0.742 af
Discarded=0.01 cfs 0.012 af Primary=0.38 cfs 0.347 af Outflow=0.39 cfs 0.359 af

Pond 8B: Basin Peak Elev=916.03' Storage=0.198 af Inflow=4.07 cfs 0.269 af
Discarded=0.01 cfs 0.012 af Primary=0.09 cfs 0.077 af Outflow=0.11 cfs 0.089 af

Pond 9P: Pond Peak Elev=899.58' Storage=0.708 af Inflow=11.90 cfs 0.955 af
Outflow=0.28 cfs 0.269 af

Pond 10B: Basin Peak Elev=911.09' Storage=0.051 af Inflow=1.30 cfs 0.092 af
Discarded=0.08 cfs 0.077 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.077 af

Pond 11P: Pond Peak Elev=914.16' Storage=0.458 af Inflow=9.92 cfs 0.643 af
Outflow=0.29 cfs 0.276 af

Pond 12P: Pond Peak Elev=923.71' Storage=0.281 af Inflow=7.18 cfs 0.476 af
Outflow=0.61 cfs 0.318 af

Pond 13P: Pond Peak Elev=896.06' Storage=0.165 af Inflow=4.94 cfs 0.285 af
Outflow=0.32 cfs 0.237 af

Link 1L: West Subwatershed Inflow=3.16 cfs 0.533 af
Primary=3.16 cfs 0.533 af

Link 2L: Northwest Subwatershed Inflow=1.43 cfs 0.322 af
Primary=1.43 cfs 0.322 af

Link 3L: North Subwatershed (drainage swale) Inflow=7.79 cfs 1.737 af
Primary=7.79 cfs 1.737 af

Link 4L: Southeast Subwatershed Inflow=8.79 cfs 1.248 af
Primary=8.79 cfs 1.248 af

Total Runoff Area = 109.500 ac Runoff Volume = 7.503 af Average Runoff Depth = 0.82"
71.74% Pervious = 78.560 ac 28.26% Impervious = 30.940 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1: Subarea Runoff Area=2.180 ac 15.14% Impervious Runoff Depth>0.82"
Flow Length=150' Tc=13.6 min CN=76 Runoff=2.28 cfs 0.149 af

Subcatchment1.2: Subarea Runoff Area=10.240 ac 35.25% Impervious Runoff Depth>1.15"
Flow Length=100' Slope=0.0200 '/' Tc=15.5 min CN=82 Runoff=14.73 cfs 0.978 af

Subcatchment2: Subarea Runoff Area=1.880 ac 56.38% Impervious Runoff Depth>1.48"
Flow Length=275' Tc=8.4 min CN=87 Runoff=4.54 cfs 0.232 af

Subcatchment3: Subarea Runoff Area=11.090 ac 44.82% Impervious Runoff Depth>1.27"
Flow Length=190' Tc=13.9 min CN=84 Runoff=18.67 cfs 1.176 af

Subcatchment4: Subarea Runoff Area=4.910 ac 11.81% Impervious Runoff Depth>0.77"
Flow Length=80' Slope=0.0200 '/' Tc=13.0 min CN=75 Runoff=4.87 cfs 0.315 af

Subcatchment5: Subarea Runoff Area=2.430 ac 11.93% Impervious Runoff Depth>0.77"
Flow Length=200' Slope=0.0100 '/' Tc=21.5 min CN=75 Runoff=1.86 cfs 0.156 af

Subcatchment6: Subarea Runoff Area=8.820 ac 35.60% Impervious Runoff Depth>1.09"
Flow Length=2,040' Tc=22.3 min CN=81 Runoff=9.92 cfs 0.798 af

Subcatchment7.1: Subarea Runoff Area=4.910 ac 13.65% Impervious Runoff Depth>0.82"
Flow Length=550' Tc=20.2 min CN=76 Runoff=4.21 cfs 0.334 af

Subcatchment7.2: Subarea Runoff Area=6.660 ac 32.13% Impervious Runoff Depth>1.09"
Flow Length=650' Slope=0.0100 '/' Tc=19.7 min CN=81 Runoff=8.01 cfs 0.603 af

Subcatchment8: Subarea Runoff Area=5.090 ac 15.13% Impervious Runoff Depth>0.82"
Flow Length=445' Tc=13.1 min CN=76 Runoff=5.40 cfs 0.347 af

Subcatchment9: Subarea Runoff Area=10.750 ac 37.12% Impervious Runoff Depth>1.21"
Flow Length=1,290' Slope=0.0200 '/' Tc=19.0 min CN=83 Runoff=14.77 cfs 1.082 af

Subcatchment10: Subarea Runoff Area=1.750 ac 13.71% Impervious Runoff Depth>0.82"
Flow Length=100' Slope=0.0200 '/' Tc=15.5 min CN=76 Runoff=1.72 cfs 0.119 af

Subcatchment11: Subarea Runoff Area=7.440 ac 43.01% Impervious Runoff Depth>1.27"
Flow Length=1,315' Tc=15.0 min CN=84 Runoff=12.21 cfs 0.789 af

Subcatchment12: Subarea Runoff Area=6.970 ac 29.12% Impervious Runoff Depth>1.03"
Flow Length=540' Tc=14.7 min CN=80 Runoff=9.13 cfs 0.597 af

Subcatchment13: Subarea Runoff Area=3.930 ac 30.79% Impervious Runoff Depth>1.09"
Flow Length=190' Slope=0.0500 '/' Tc=11.2 min CN=81 Runoff=6.22 cfs 0.356 af

Subcatchment14: Subarea Runoff Area=1.740 ac 7.47% Impervious Runoff Depth>0.77"
Flow Length=65' Slope=0.0100 '/' Tc=14.5 min CN=75 Runoff=1.64 cfs 0.112 af

Subcatchment15: Subarea Runoff Area=4.060 ac 17.73% Impervious Runoff Depth>0.87"
Flow Length=80' Slope=0.0300 '/' Tc=11.0 min CN=77 Runoff=5.07 cfs 0.294 af

Subcatchment16: Subarea Runoff Area=11.680 ac 11.13% Impervious Runoff Depth>0.77"
Flow Length=505' Tc=13.3 min CN=75 Runoff=11.45 cfs 0.749 af

Subcatchment17: Subarea Runoff Area=2.970 ac 18.86% Impervious Runoff Depth>0.87"
Flow Length=115' Slope=0.0700 '/' Tc=9.5 min CN=77 Runoff=3.87 cfs 0.215 af

Pond 1P&B: Basin 1.1B, Pond 1.2P, & Peak Elev=935.66' Storage=0.716 af Inflow=16.99 cfs 1.126 af
Discarded=0.09 cfs 0.084 af Primary=0.80 cfs 0.656 af Outflow=0.89 cfs 0.741 af

Pond 2B: Basin Peak Elev=933.71' Storage=0.025 af Inflow=4.56 cfs 0.888 af
Discarded=0.06 cfs 0.059 af Primary=4.33 cfs 0.816 af Outflow=4.40 cfs 0.874 af

Pond 3P: Pond Peak Elev=929.85' Storage=0.789 af Inflow=18.67 cfs 1.176 af
Outflow=1.03 cfs 0.552 af

Pond 4B: Basin Peak Elev=936.44' Storage=0.102 af Inflow=4.87 cfs 0.315 af
Discarded=1.03 cfs 0.315 af Primary=0.00 cfs 0.000 af Outflow=1.03 cfs 0.315 af

Pond 5RG: Rain Garden Peak Elev=926.37' Storage=0.097 af Inflow=1.86 cfs 0.156 af
Discarded=0.01 cfs 0.008 af Primary=0.12 cfs 0.075 af Outflow=0.13 cfs 0.084 af

Pond 6P: Pond Peak Elev=916.81' Storage=0.586 af Inflow=9.92 cfs 0.873 af
Outflow=0.39 cfs 0.368 af

Pond 7RG&P: Rain Garden 7RG & Pond 7P Peak Elev=921.98' Storage=0.652 af Inflow=12.20 cfs 0.937 af
Discarded=0.01 cfs 0.014 af Primary=0.42 cfs 0.396 af Outflow=0.44 cfs 0.410 af

Pond 8B: Basin Peak Elev=916.23' Storage=0.246 af Inflow=5.40 cfs 0.347 af
Discarded=0.01 cfs 0.012 af Primary=0.14 cfs 0.122 af Outflow=0.15 cfs 0.134 af

Pond 9P: Pond Peak Elev=899.99' Storage=0.915 af Inflow=14.77 cfs 1.203 af
Outflow=0.32 cfs 0.305 af

Pond 10B: Basin Peak Elev=911.24' Storage=0.071 af Inflow=1.72 cfs 0.119 af
Discarded=0.09 cfs 0.083 af Primary=0.00 cfs 0.000 af Outflow=0.09 cfs 0.083 af

Pond 11P: Pond Peak Elev=914.51' Storage=0.574 af Inflow=12.21 cfs 0.789 af
Outflow=0.32 cfs 0.310 af

Pond 12P: Pond Peak Elev=923.92' Storage=0.323 af Inflow=9.13 cfs 0.597 af
Outflow=1.13 cfs 0.425 af

Pond 13P: Pond Peak Elev=896.26' Storage=0.213 af Inflow=6.22 cfs 0.356 af
Outflow=0.38 cfs 0.290 af

Link 1L: West Subwatershed Inflow=4.10 cfs 0.767 af
Primary=4.10 cfs 0.767 af

Link 2L: Northwest Subwatershed Inflow=1.90 cfs 0.401 af
Primary=1.90 cfs 0.401 af

Link 3L: North Subwatershed (drainage swale) Inflow=9.84 cfs 2.149 af
Primary=9.84 cfs 2.149 af

Link 4L: Southeast Subwatershed Inflow=11.79 cfs 1.513 af
Primary=11.79 cfs 1.513 af

Total Runoff Area = 109.500 ac Runoff Volume = 9.398 af Average Runoff Depth = 1.03"
71.74% Pervious = 78.560 ac 28.26% Impervious = 30.940 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1: Subarea Runoff Area=2.180 ac 15.14% Impervious Runoff Depth>1.59"
Flow Length=150' Tc=13.6 min CN=76 Runoff=4.61 cfs 0.289 af

Subcatchment1.2: Subarea Runoff Area=10.240 ac 35.25% Impervious Runoff Depth>2.04"
Flow Length=100' Slope=0.0200 '/' Tc=15.5 min CN=82 Runoff=26.41 cfs 1.740 af

Subcatchment2: Subarea Runoff Area=1.880 ac 56.38% Impervious Runoff Depth>2.46"
Flow Length=275' Tc=8.4 min CN=87 Runoff=7.45 cfs 0.386 af

Subcatchment3: Subarea Runoff Area=11.090 ac 44.82% Impervious Runoff Depth>2.20"
Flow Length=190' Tc=13.9 min CN=84 Runoff=32.49 cfs 2.036 af

Subcatchment4: Subarea Runoff Area=4.910 ac 11.81% Impervious Runoff Depth>1.52"
Flow Length=80' Slope=0.0200 '/' Tc=13.0 min CN=75 Runoff=10.20 cfs 0.624 af

Subcatchment5: Subarea Runoff Area=2.430 ac 11.93% Impervious Runoff Depth>1.52"
Flow Length=200' Slope=0.0100 '/' Tc=21.5 min CN=75 Runoff=3.90 cfs 0.308 af

Subcatchment6: Subarea Runoff Area=8.820 ac 35.60% Impervious Runoff Depth>1.96"
Flow Length=2,040' Tc=22.3 min CN=81 Runoff=18.22 cfs 1.440 af

Subcatchment7.1: Subarea Runoff Area=4.910 ac 13.65% Impervious Runoff Depth>1.59"
Flow Length=550' Tc=20.2 min CN=76 Runoff=8.58 cfs 0.651 af

Subcatchment7.2: Subarea Runoff Area=6.660 ac 32.13% Impervious Runoff Depth>1.96"
Flow Length=650' Slope=0.0100 '/' Tc=19.7 min CN=81 Runoff=14.68 cfs 1.088 af

Subcatchment8: Subarea Runoff Area=5.090 ac 15.13% Impervious Runoff Depth>1.59"
Flow Length=445' Tc=13.1 min CN=76 Runoff=11.03 cfs 0.676 af

Subcatchment9: Subarea Runoff Area=10.750 ac 37.12% Impervious Runoff Depth>2.12"
Flow Length=1,290' Slope=0.0200 '/' Tc=19.0 min CN=83 Runoff=26.08 cfs 1.899 af

Subcatchment10: Subarea Runoff Area=1.750 ac 13.71% Impervious Runoff Depth>1.59"
Flow Length=100' Slope=0.0200 '/' Tc=15.5 min CN=76 Runoff=3.49 cfs 0.232 af

Subcatchment11: Subarea Runoff Area=7.440 ac 43.01% Impervious Runoff Depth>2.20"
Flow Length=1,315' Tc=15.0 min CN=84 Runoff=21.13 cfs 1.366 af

Subcatchment12: Subarea Runoff Area=6.970 ac 29.12% Impervious Runoff Depth>1.88"
Flow Length=540' Tc=14.7 min CN=80 Runoff=16.98 cfs 1.094 af

Subcatchment13: Subarea Runoff Area=3.930 ac 30.79% Impervious Runoff Depth>1.96"
Flow Length=190' Slope=0.0500 '/' Tc=11.2 min CN=81 Runoff=11.31 cfs 0.642 af

Subcatchment14: Subarea Runoff Area=1.740 ac 7.47% Impervious Runoff Depth>1.52"
Flow Length=65' Slope=0.0100 '/' Tc=14.5 min CN=75 Runoff=3.41 cfs 0.221 af

Subcatchment15: Subarea Runoff Area=4.060 ac 17.73% Impervious Runoff Depth>1.66"
Flow Length=80' Slope=0.0300 '/' Tc=11.0 min CN=77 Runoff=9.98 cfs 0.563 af

Subcatchment16: Subarea Runoff Area=11.680 ac 11.13% Impervious Runoff Depth>1.52"
Flow Length=505' Tc=13.3 min CN=75 Runoff=23.96 cfs 1.483 af

Subcatchment17: Subarea Runoff Area=2.970 ac 18.86% Impervious Runoff Depth>1.66"
Flow Length=115' Slope=0.0700 '/' Tc=9.5 min CN=77 Runoff=7.66 cfs 0.412 af

Pond 1P&B: Basin 1.1B, Pond 1.2P, & Peak Elev=936.48' Storage=1.380 af Inflow=30.98 cfs 2.030 af
Discarded=0.12 cfs 0.114 af Primary=1.17 cfs 1.051 af Outflow=1.28 cfs 1.165 af

Pond 2B: Basin Peak Elev=933.83' Storage=0.029 af Inflow=7.91 cfs 1.437 af
Discarded=0.07 cfs 0.067 af Primary=7.60 cfs 1.352 af Outflow=7.67 cfs 1.419 af

Pond 3P: Pond Peak Elev=930.71' Storage=1.095 af Inflow=32.49 cfs 2.036 af
Outflow=7.76 cfs 1.372 af

Pond 4B: Basin Peak Elev=937.04' Storage=0.267 af Inflow=10.20 cfs 0.624 af
Discarded=1.38 cfs 0.623 af Primary=0.00 cfs 0.000 af Outflow=1.39 cfs 0.623 af

Pond 5RG: Rain Garden Peak Elev=927.14' Storage=0.195 af Inflow=3.90 cfs 0.308 af
Discarded=0.01 cfs 0.011 af Primary=0.24 cfs 0.193 af Outflow=0.25 cfs 0.204 af

Pond 6P: Pond Peak Elev=917.77' Storage=0.890 af Inflow=18.26 cfs 1.633 af
Outflow=2.31 cfs 0.992 af

Pond 7RG&P: Rain Garden 7RG & Pond 7P Peak Elev=922.73' Storage=1.307 af Inflow=23.25 cfs 1.739 af
Discarded=0.02 cfs 0.024 af Primary=0.56 cfs 0.537 af Outflow=0.58 cfs 0.561 af

Pond 8B: Basin Peak Elev=917.13' Storage=0.490 af Inflow=11.03 cfs 0.676 af
Discarded=0.01 cfs 0.015 af Primary=0.26 cfs 0.245 af Outflow=0.28 cfs 0.260 af

Pond 9P: Pond Peak Elev=901.49' Storage=1.735 af Inflow=26.21 cfs 2.144 af
Outflow=0.43 cfs 0.413 af

Pond 10B: Basin Peak Elev=911.85' Storage=0.160 af Inflow=3.49 cfs 0.232 af
Discarded=0.10 cfs 0.104 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.104 af

Pond 11P: Pond Peak Elev=915.45' Storage=0.929 af Inflow=21.13 cfs 1.366 af
Outflow=1.29 cfs 0.652 af

Pond 12P: Pond Peak Elev=924.53' Storage=0.459 af Inflow=16.98 cfs 1.094 af
Outflow=7.48 cfs 0.888 af

Pond 13P: Pond Peak Elev=897.04' Storage=0.416 af Inflow=11.31 cfs 0.642 af
Outflow=0.53 cfs 0.457 af

Link 1L: West Subwatershed Inflow=9.12 cfs 1.784 af
Primary=9.12 cfs 1.784 af

Link 2L: Northwest Subwatershed Inflow=3.80 cfs 0.678 af
Primary=3.80 cfs 0.678 af

Link 3L: North Subwatershed (drainage swale) Inflow=18.23 cfs 3.868 af
Primary=18.23 cfs 3.868 af

Link 4L: Southeast Subwatershed Inflow=24.52 cfs 3.013 af
Primary=24.52 cfs 3.013 af

Total Runoff Area = 109.500 ac Runoff Volume = 17.151 af Average Runoff Depth = 1.88"
71.74% Pervious = 78.560 ac 28.26% Impervious = 30.940 ac

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1.1: Subarea Runoff Area=2.180 ac 15.14% Impervious Runoff Depth>3.53"
Flow Length=150' Tc=13.6 min CN=76 Runoff=10.36 cfs 0.642 af

Subcatchment1.2: Subarea Runoff Area=10.240 ac 35.25% Impervious Runoff Depth>4.15"
Flow Length=100' Slope=0.0200 '/' Tc=15.5 min CN=82 Runoff=52.99 cfs 3.541 af

Subcatchment2: Subarea Runoff Area=1.880 ac 56.38% Impervious Runoff Depth>4.69"
Flow Length=275' Tc=8.4 min CN=87 Runoff=13.75 cfs 0.734 af

Subcatchment3: Subarea Runoff Area=11.090 ac 44.82% Impervious Runoff Depth>4.36"
Flow Length=190' Tc=13.9 min CN=84 Runoff=63.08 cfs 4.031 af

Subcatchment4: Subarea Runoff Area=4.910 ac 11.81% Impervious Runoff Depth>3.43"
Flow Length=80' Slope=0.0200 '/' Tc=13.0 min CN=75 Runoff=23.21 cfs 1.405 af

Subcatchment5: Subarea Runoff Area=2.430 ac 11.93% Impervious Runoff Depth>3.43"
Flow Length=200' Slope=0.0100 '/' Tc=21.5 min CN=75 Runoff=8.98 cfs 0.695 af

Subcatchment6: Subarea Runoff Area=8.820 ac 35.60% Impervious Runoff Depth>4.04"
Flow Length=2,040' Tc=22.3 min CN=81 Runoff=37.47 cfs 2.971 af

Subcatchment7.1: Subarea Runoff Area=4.910 ac 13.65% Impervious Runoff Depth>3.53"
Flow Length=550' Tc=20.2 min CN=76 Runoff=19.26 cfs 1.445 af

Subcatchment7.2: Subarea Runoff Area=6.660 ac 32.13% Impervious Runoff Depth>4.04"
Flow Length=650' Slope=0.0100 '/' Tc=19.7 min CN=81 Runoff=30.05 cfs 2.244 af

Subcatchment8: Subarea Runoff Area=5.090 ac 15.13% Impervious Runoff Depth>3.53"
Flow Length=445' Tc=13.1 min CN=76 Runoff=24.60 cfs 1.499 af

Subcatchment9: Subarea Runoff Area=10.750 ac 37.12% Impervious Runoff Depth>4.25"
Flow Length=1,290' Slope=0.0200 '/' Tc=19.0 min CN=83 Runoff=51.61 cfs 3.811 af

Subcatchment10: Subarea Runoff Area=1.750 ac 13.71% Impervious Runoff Depth>3.53"
Flow Length=100' Slope=0.0200 '/' Tc=15.5 min CN=76 Runoff=7.81 cfs 0.515 af

Subcatchment11: Subarea Runoff Area=7.440 ac 43.01% Impervious Runoff Depth>4.36"
Flow Length=1,315' Tc=15.0 min CN=84 Runoff=41.03 cfs 2.704 af

Subcatchment12: Subarea Runoff Area=6.970 ac 29.12% Impervious Runoff Depth>3.94"
Flow Length=540' Tc=14.7 min CN=80 Runoff=35.22 cfs 2.289 af

Subcatchment13: Subarea Runoff Area=3.930 ac 30.79% Impervious Runoff Depth>4.05"
Flow Length=190' Slope=0.0500 '/' Tc=11.2 min CN=81 Runoff=22.95 cfs 1.325 af

Subcatchment14: Subarea Runoff Area=1.740 ac 7.47% Impervious Runoff Depth>3.43"
Flow Length=65' Slope=0.0100 '/' Tc=14.5 min CN=75 Runoff=7.76 cfs 0.498 af

Subcatchment15: Subarea Runoff Area=4.060 ac 17.73% Impervious Runoff Depth>3.63"
Flow Length=80' Slope=0.0300 '/' Tc=11.0 min CN=77 Runoff=21.73 cfs 1.230 af

Subcatchment16: Subarea Runoff Area=11.680 ac 11.13% Impervious Runoff Depth>3.43"
Flow Length=505' Tc=13.3 min CN=75 Runoff=54.55 cfs 3.342 af

Subcatchment17: Subarea Runoff Area=2.970 ac 18.86% Impervious Runoff Depth>3.63"
Flow Length=115' Slope=0.0700 '/' Tc=9.5 min CN=77 Runoff=16.70 cfs 0.900 af

Pond 1P&B: Basin 1.1B, Pond 1.2P, & Peak Elev=937.78' Storage=2.772 af Inflow=63.16 cfs 4.183 af
Discarded=0.17 cfs 0.165 af Primary=3.99 cfs 2.291 af Outflow=4.16 cfs 2.455 af

Pond 2B: Basin Peak Elev=934.01' Storage=0.036 af Inflow=14.73 cfs 3.025 af
Discarded=0.08 cfs 0.079 af Primary=14.36 cfs 2.927 af Outflow=14.43 cfs 3.006 af

Pond 3P: Pond Peak Elev=932.00' Storage=1.614 af Inflow=63.20 cfs 4.214 af
Outflow=30.26 cfs 3.513 af

Pond 4B: Basin Peak Elev=938.15' Storage=0.653 af Inflow=23.21 cfs 1.405 af
Discarded=2.23 cfs 1.221 af Primary=2.22 cfs 0.183 af Outflow=4.45 cfs 1.404 af

Pond 5RG: Rain Garden Peak Elev=928.57' Storage=0.458 af Inflow=8.98 cfs 0.695 af
Discarded=0.02 cfs 0.019 af Primary=0.90 cfs 0.379 af Outflow=0.92 cfs 0.398 af

Pond 6P: Pond Peak Elev=918.93' Storage=1.431 af Inflow=37.72 cfs 3.350 af
Outflow=11.95 cfs 2.659 af

Pond 7RG&P: Rain Garden 7RG & Pond 7P Peak Elev=923.77' Storage=2.507 af Inflow=49.28 cfs 3.689 af
Discarded=0.04 cfs 0.036 af Primary=3.21 cfs 2.033 af Outflow=3.25 cfs 2.069 af

Pond 8B: Basin Peak Elev=918.66' Storage=0.985 af Inflow=24.60 cfs 1.499 af
Discarded=0.02 cfs 0.021 af Primary=2.28 cfs 0.622 af Outflow=2.30 cfs 0.644 af

Pond 9P: Pond Peak Elev=902.97' Storage=2.660 af Inflow=51.91 cfs 4.433 af
Outflow=6.65 cfs 2.369 af

Pond 10B: Basin Peak Elev=912.93' Storage=0.345 af Inflow=7.81 cfs 0.515 af
Discarded=0.14 cfs 0.138 af Primary=0.21 cfs 0.159 af Outflow=0.35 cfs 0.296 af

Pond 11P: Pond Peak Elev=916.48' Storage=1.393 af Inflow=41.03 cfs 2.704 af
Outflow=14.60 cfs 1.941 af

Pond 12P: Pond Peak Elev=925.90' Storage=0.844 af Inflow=35.22 cfs 2.289 af
Outflow=14.73 cfs 2.052 af

Pond 13P: Pond Peak Elev=897.76' Storage=0.633 af Inflow=22.95 cfs 1.325 af
Outflow=7.42 cfs 1.023 af

Link 1L: West Subwatershed Inflow=42.78 cfs 4.412 af
Primary=42.78 cfs 4.412 af

Link 2L: Northwest Subwatershed Inflow=13.66 cfs 1.521 af
Primary=13.66 cfs 1.521 af

Link 3L: North Subwatershed (drainage swale) Inflow=48.92 cfs 10.678 af
Primary=48.92 cfs 10.678 af

Link 4L: Southeast Subwatershed Inflow=55.56 cfs 8.034 af
Primary=55.56 cfs 8.034 af

Total Runoff Area = 109.500 ac Runoff Volume = 35.821 af Average Runoff Depth = 3.93"
71.74% Pervious = 78.560 ac 28.26% Impervious = 30.940 ac

Summary for Subcatchment 1.1: Subarea

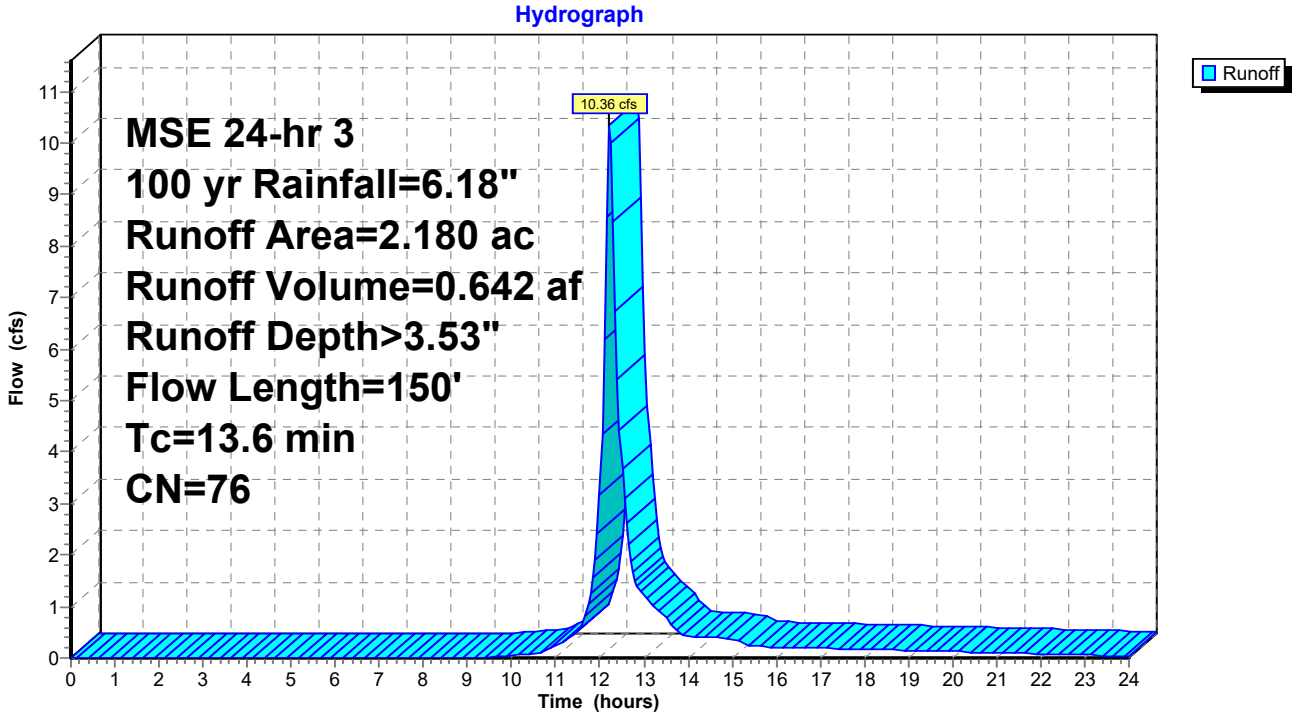
Runoff = 10.36 cfs @ 12.22 hrs, Volume= 0.642 af, Depth> 3.53"
Routed to Pond 1P&B : Basin 1.1B, Pond 1.2P, & Basin 1.2B combined

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.330	98	impervious
*	0.900	74	lawn - C
*	0.870	71	meadow - C
*	0.080	70	woods - C
	2.180	76	Weighted Average
	1.850		84.86% Pervious Area
	0.330		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
0.4	50	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.6	150	Total			

Subcatchment 1.1: Subarea



Summary for Subcatchment 1.2: Subarea

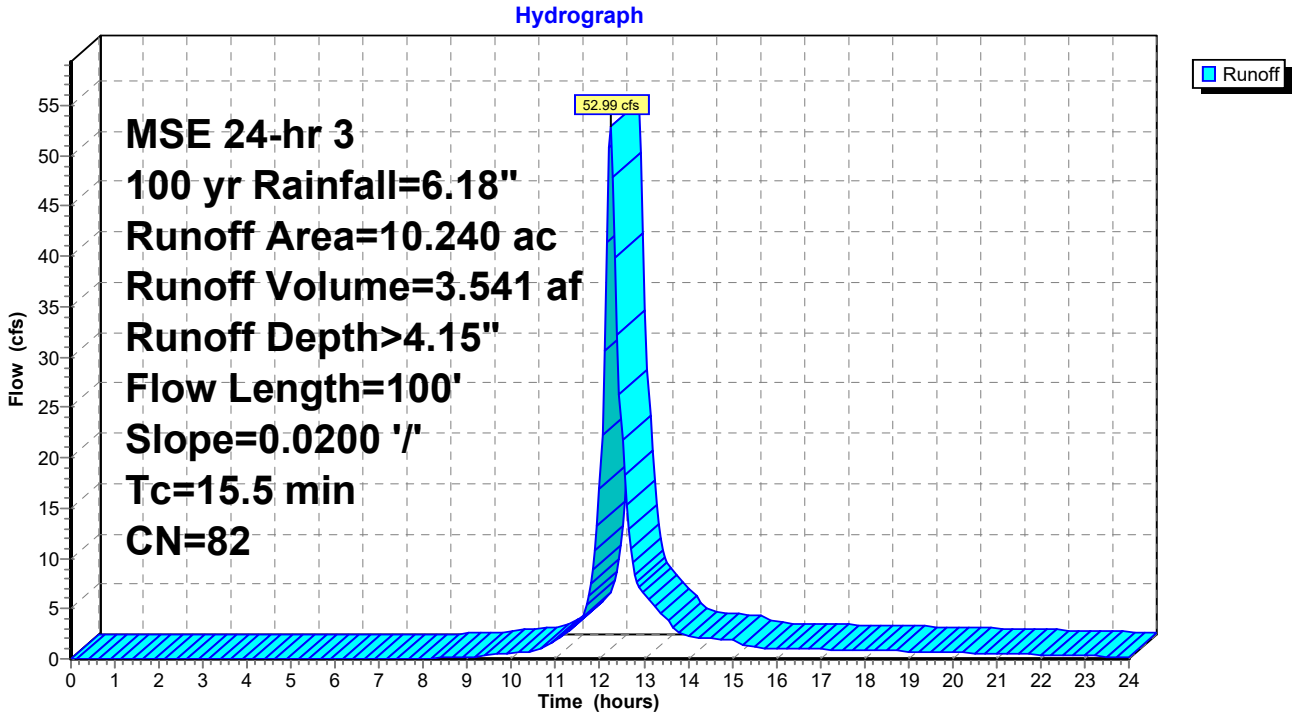
Runoff = 52.99 cfs @ 12.24 hrs, Volume= 3.541 af, Depth> 4.15"
Routed to Pond 1P&B : Basin 1.1B, Pond 1.2P, & Basin 1.2B combined

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	3.500	98	impervious
*	4.090	74	lawn - C
*	2.220	71	meadow - C
*	0.320	70	woods - C
*	0.110	98	water
	10.240	82	Weighted Average
	6.630		64.75% Pervious Area
	3.610		35.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	100	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"

Subcatchment 1.2: Subarea



Summary for Subcatchment 2: Subarea

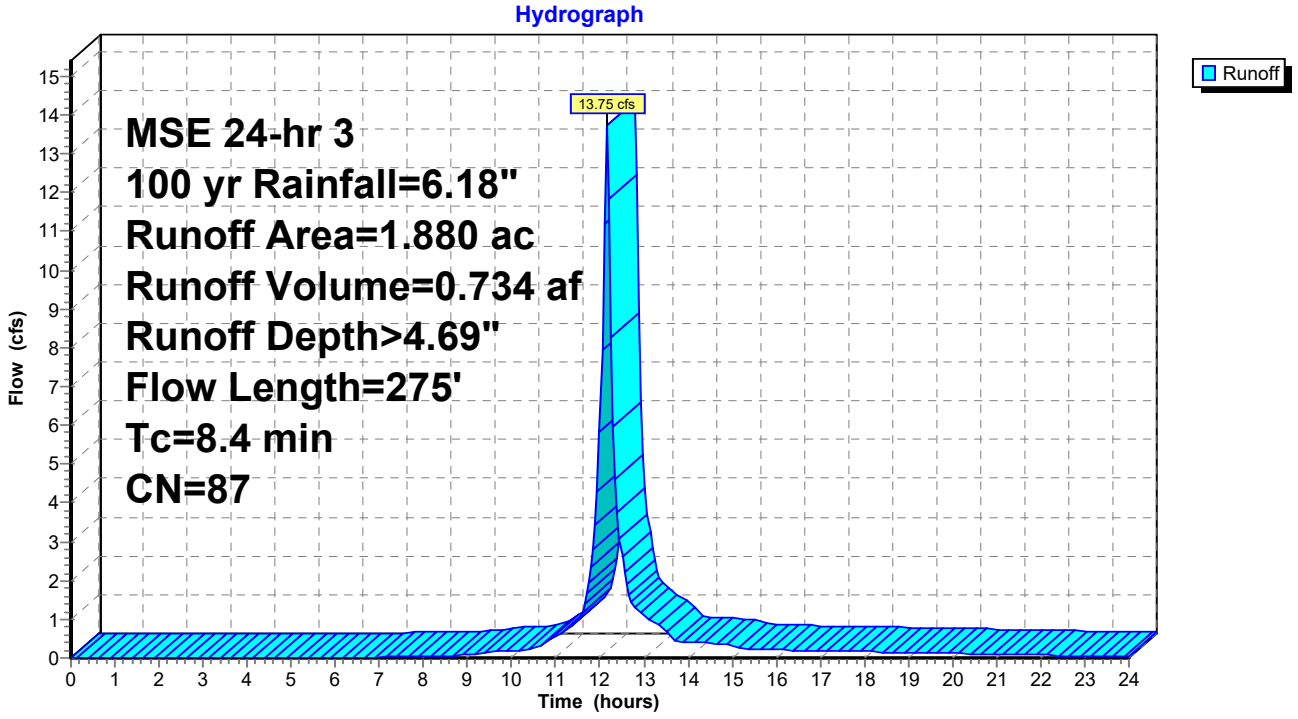
Runoff = 13.75 cfs @ 12.15 hrs, Volume= 0.734 af, Depth> 4.69"
Routed to Pond 2B : Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	1.060	98	impervious
*	0.640	74	lawn - C
*	0.180	71	meadow - C
	1.880	87	Weighted Average
	0.820		43.62% Pervious Area
	1.060		56.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8	50	0.0400	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
1.4	170	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.2	55		5.00		**Direct Entry,**
8.4	275	Total			

Subcatchment 2: Subarea



Summary for Subcatchment 3: Subarea

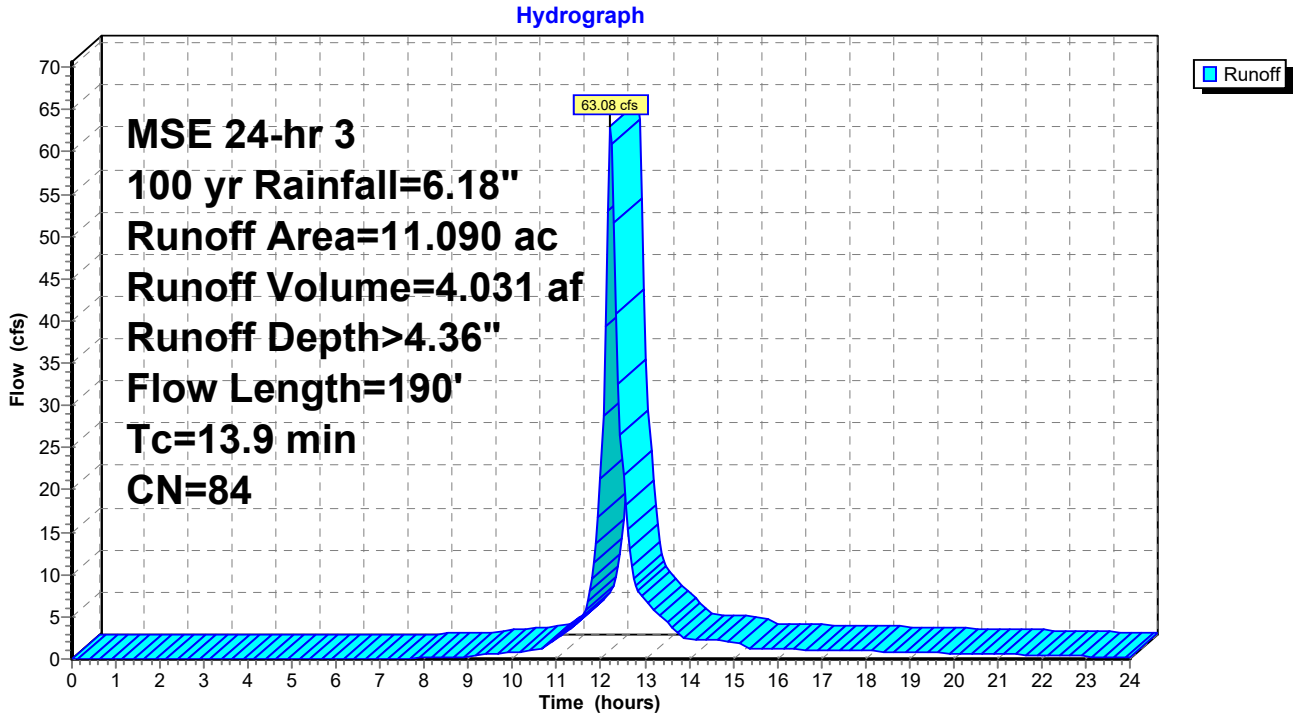
Runoff = 63.08 cfs @ 12.22 hrs, Volume= 4.031 af, Depth> 4.36"
Routed to Pond 3P : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	4.750	98	impervious
*	4.600	74	lawn - C
*	0.220	98	water
*	1.520	71	meadow - C
	11.090	84	Weighted Average
	6.120		55.18% Pervious Area
	4.970		44.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
0.2	40	0.0300	2.79		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.5	50	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.9	190	Total			

Subcatchment 3: Subarea



Summary for Subcatchment 4: Subarea

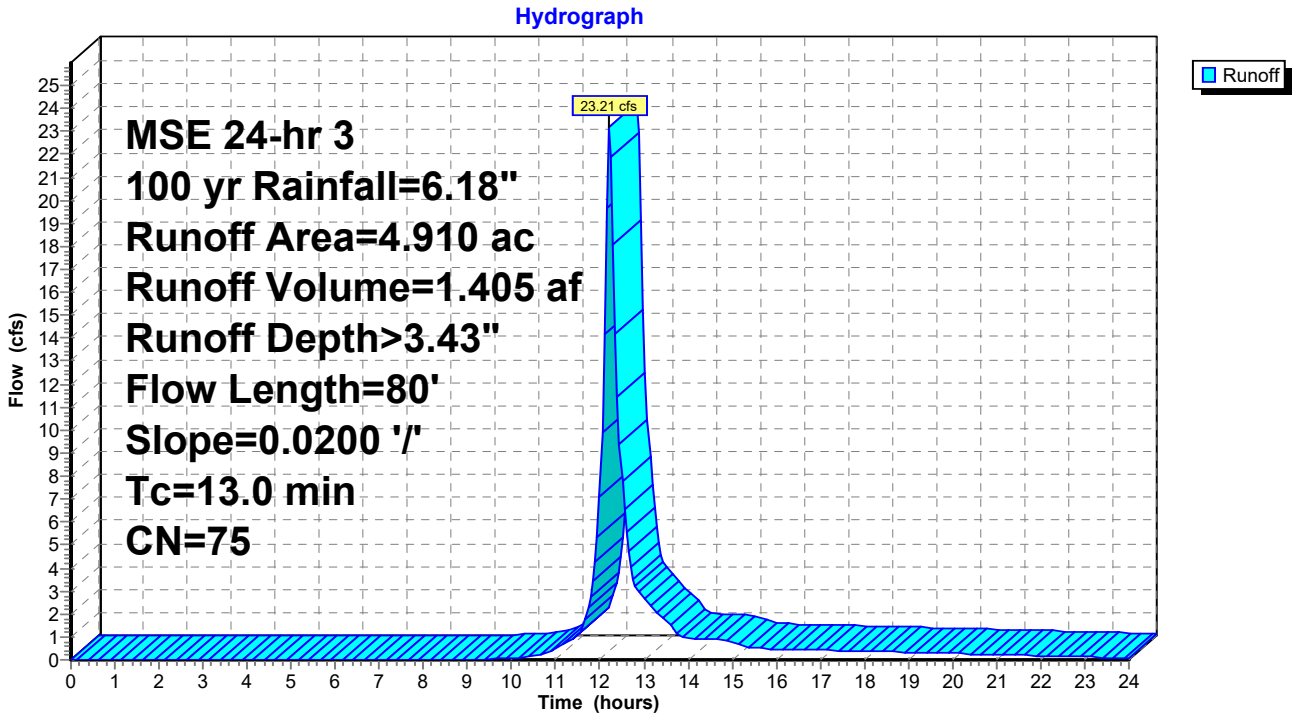
Runoff = 23.21 cfs @ 12.21 hrs, Volume= 1.405 af, Depth> 3.43"
Routed to Pond 4B : Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.580	98	impervious
*	2.040	74	lawn - C
*	2.290	71	meadow - C
	4.910	75	Weighted Average
	4.330		88.19% Pervious Area
	0.580		11.81% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	80	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"

Subcatchment 4: Subarea



Summary for Subcatchment 5: Subarea

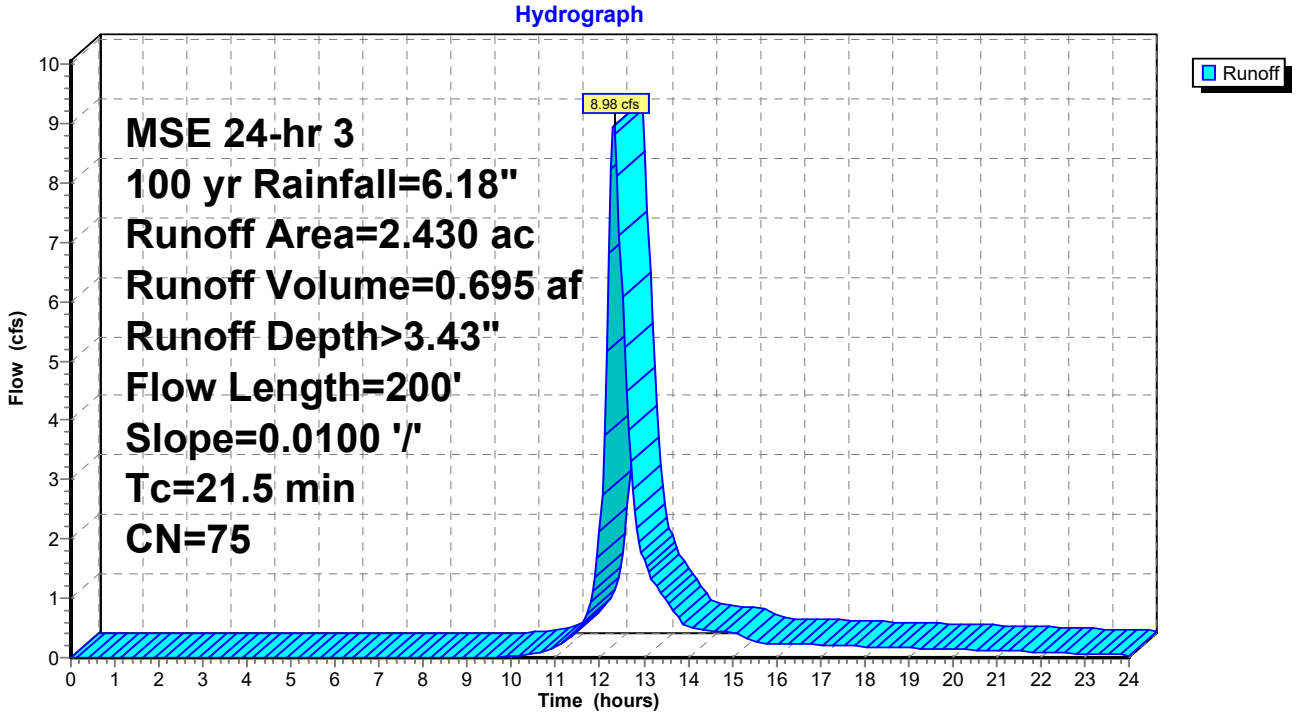
Runoff = 8.98 cfs @ 12.32 hrs, Volume= 0.695 af, Depth> 3.43"
Routed to Pond 5RG : Rain Garden

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.290	98	impervious
*	1.010	74	lawn - C
*	1.130	71	meadow - C
	2.430	75	Weighted Average
	2.140		88.07% Pervious Area
	0.290		11.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
1.0	100	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
21.5	200	Total			

Subcatchment 5: Subarea



Summary for Subcatchment 6: Subarea

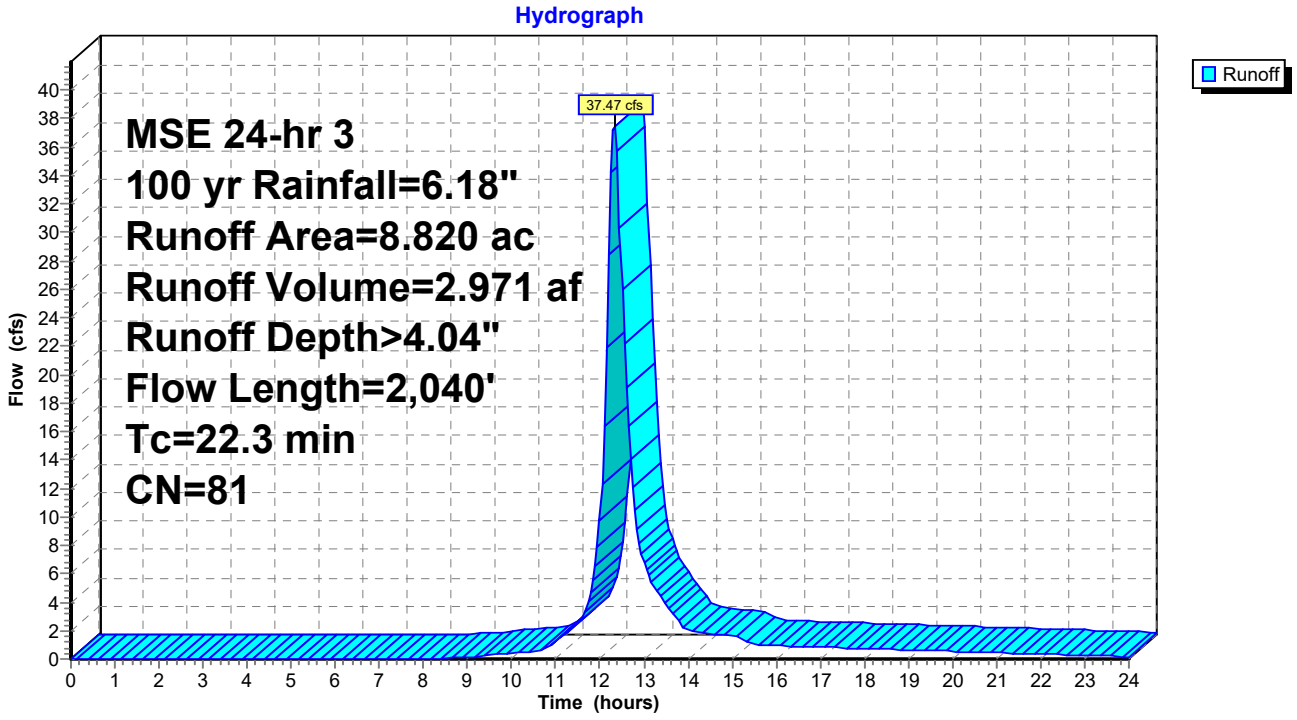
Runoff = 37.47 cfs @ 12.32 hrs, Volume= 2.971 af, Depth> 4.04"
Routed to Pond 6P : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	2.990	98	impervious
*	3.040	74	lawn - C
*	0.150	98	water
*	1.330	70	woods - C
*	1.310	71	meadow - C
	8.820	81	Weighted Average
	5.680		64.40% Pervious Area
	3.140		35.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	100	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
0.6	70	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
6.2	1,870		5.00		**Direct Entry,**
22.3	2,040	Total			

Subcatchment 6: Subarea



Summary for Subcatchment 7.1: Subarea

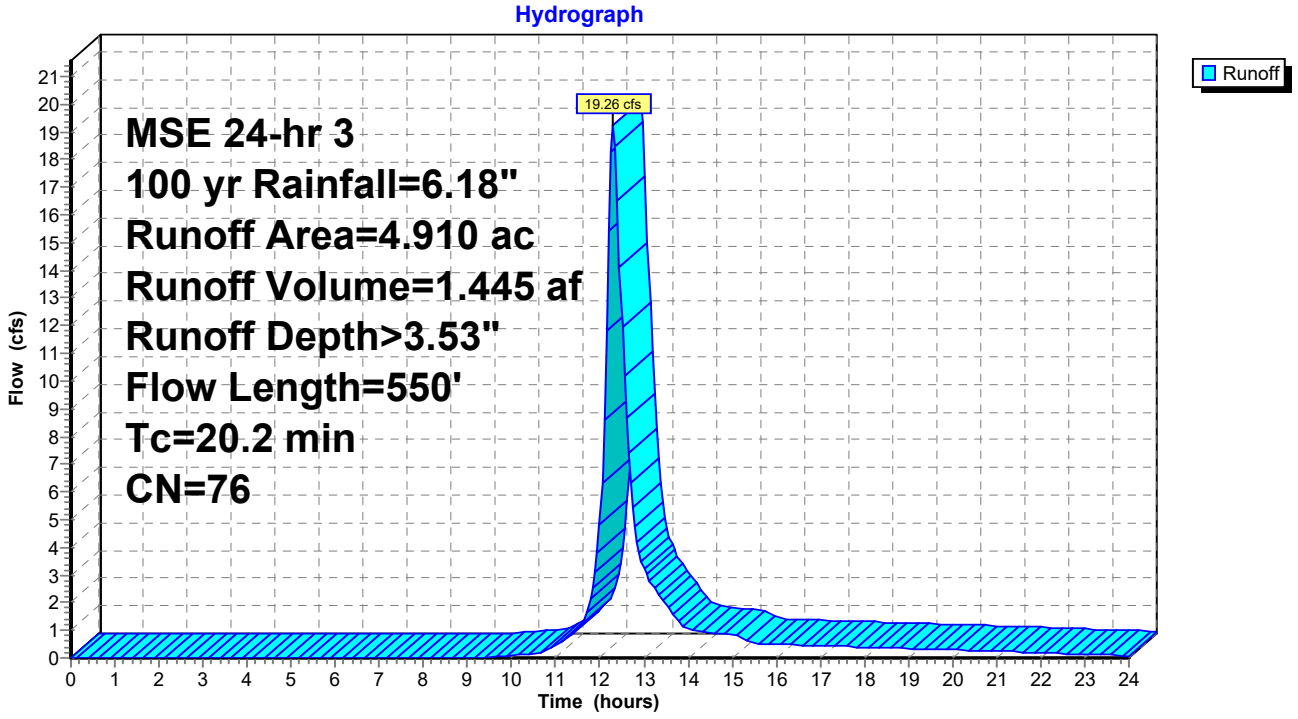
Runoff = 19.26 cfs @ 12.30 hrs, Volume= 1.445 af, Depth> 3.53"
Routed to Pond 7RG&P : Rain Garden 7RG & Pond 7P combined

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.670	98	impervious
*	1.750	74	lawn - C
*	0.320	70	woods - C
*	2.170	71	meadow - C
	4.910	76	Weighted Average
	4.240		86.35% Pervious Area
	0.670		13.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	100	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
4.7	450	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
20.2	550	Total			

Subcatchment 7.1: Subarea



Summary for Subcatchment 7.2: Subarea

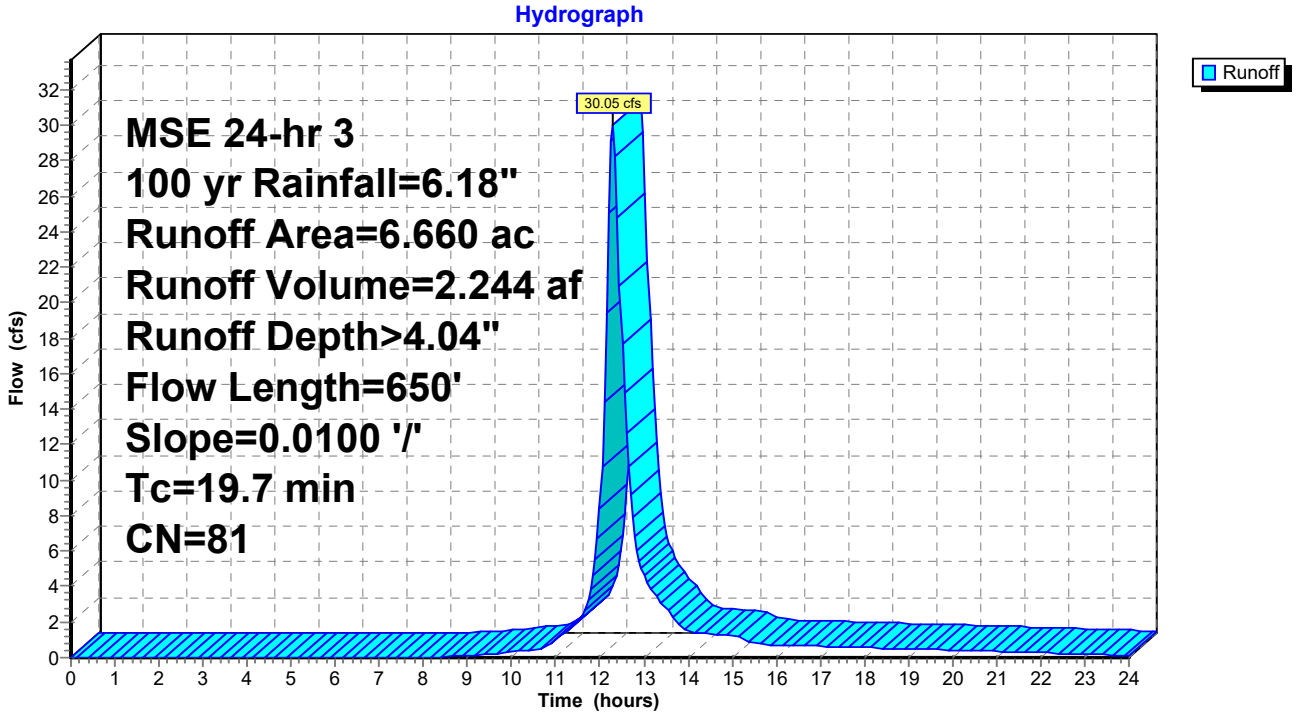
Runoff = 30.05 cfs @ 12.29 hrs, Volume= 2.244 af, Depth> 4.04"
Routed to Pond 7RG&P : Rain Garden 7RG & Pond 7P combined

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	1.930	98	impervious
*	3.070	74	lawn - C
*	0.210	98	water
*	0.300	70	woods - C
*	1.150	71	meadow - C
	6.660	81	Weighted Average
	4.520		67.87% Pervious Area
	2.140		32.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	60	0.0100	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
6.1	590	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
19.7	650	Total			

Subcatchment 7.2: Subarea



Summary for Subcatchment 8: Subarea

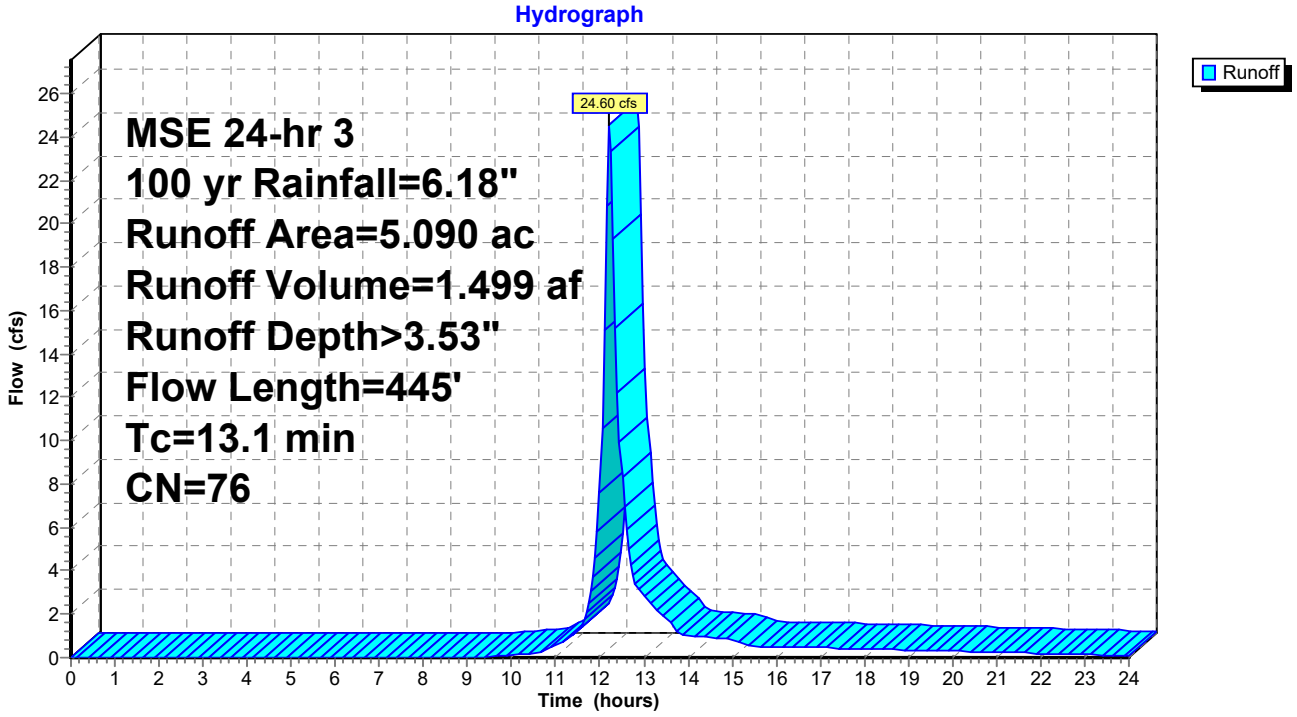
Runoff = 24.60 cfs @ 12.21 hrs, Volume= 1.499 af, Depth> 3.53"
Routed to Pond 8B : Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.770	98	impervious
*	2.430	74	lawn - C
*	1.000	71	meadow - C
*	0.890	70	woods - C
	5.090	76	Weighted Average
	4.320		84.87% Pervious Area
	0.770		15.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.0500	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
1.7	165	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.6	180		5.00		**Direct Entry,**
13.1	445	Total			

Subcatchment 8: Subarea



Summary for Subcatchment 9: Subarea

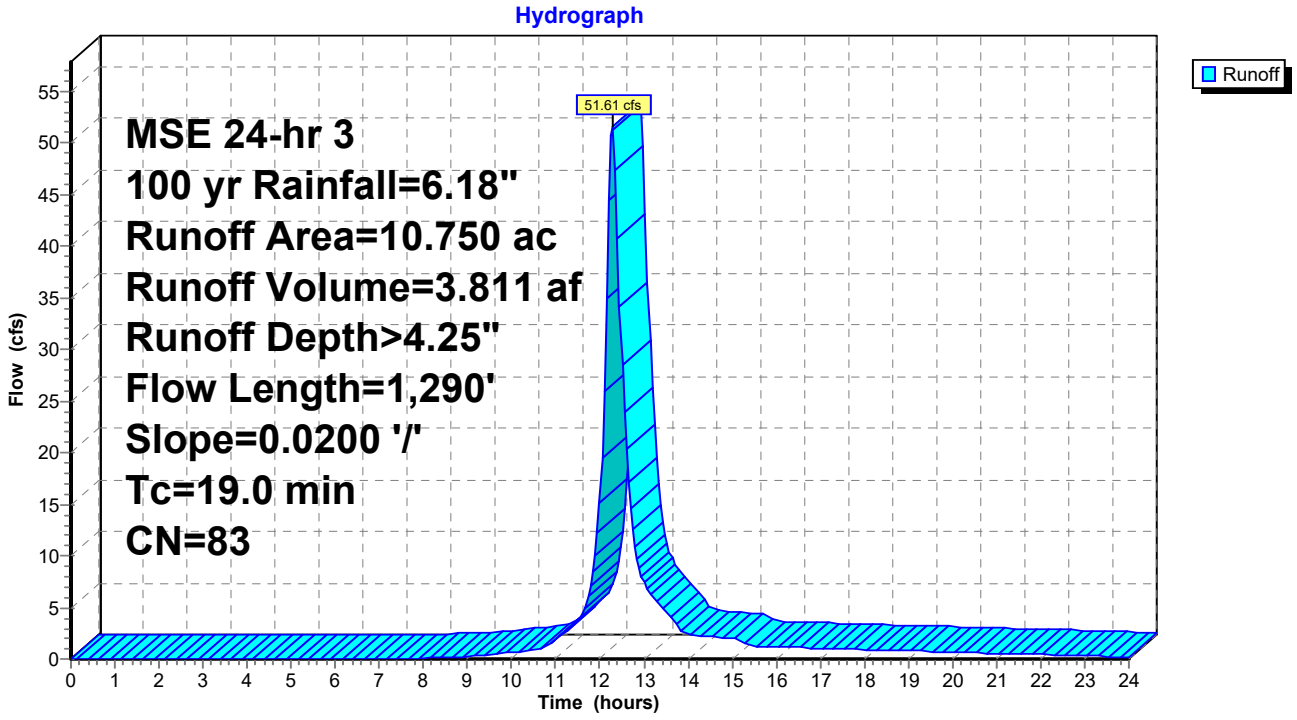
Runoff = 51.61 cfs @ 12.28 hrs, Volume= 3.811 af, Depth> 4.25"
Routed to Pond 9P : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	3.580	98	impervious
*	5.320	74	lawn - C
*	0.410	98	water
*	0.010	70	woods - C
*	1.430	71	meadow - C
	10.750	83	Weighted Average
	6.760		62.88% Pervious Area
	3.990		37.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	95	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
0.3	45	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
3.8	1,150		5.00		**Direct Entry,**
19.0	1,290	Total			

Subcatchment 9: Subarea



Summary for Subcatchment 10: Subarea

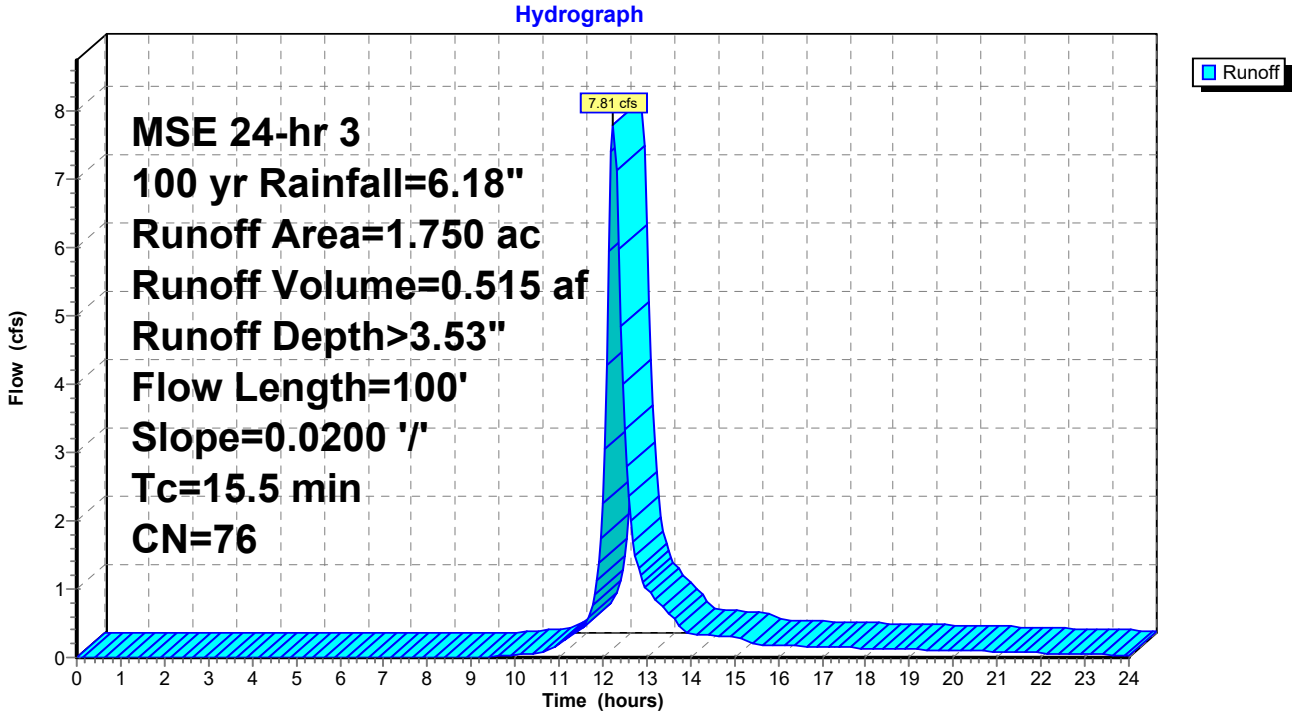
Runoff = 7.81 cfs @ 12.24 hrs, Volume= 0.515 af, Depth> 3.53"
Routed to Pond 10B : Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.240	98	impervious
*	0.970	74	lawn - C
*	0.470	71	meadow - C
*	0.070	70	woods - C
	1.750	76	Weighted Average
	1.510		86.29% Pervious Area
	0.240		13.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	100	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"

Subcatchment 10: Subarea



Summary for Subcatchment 11: Subarea

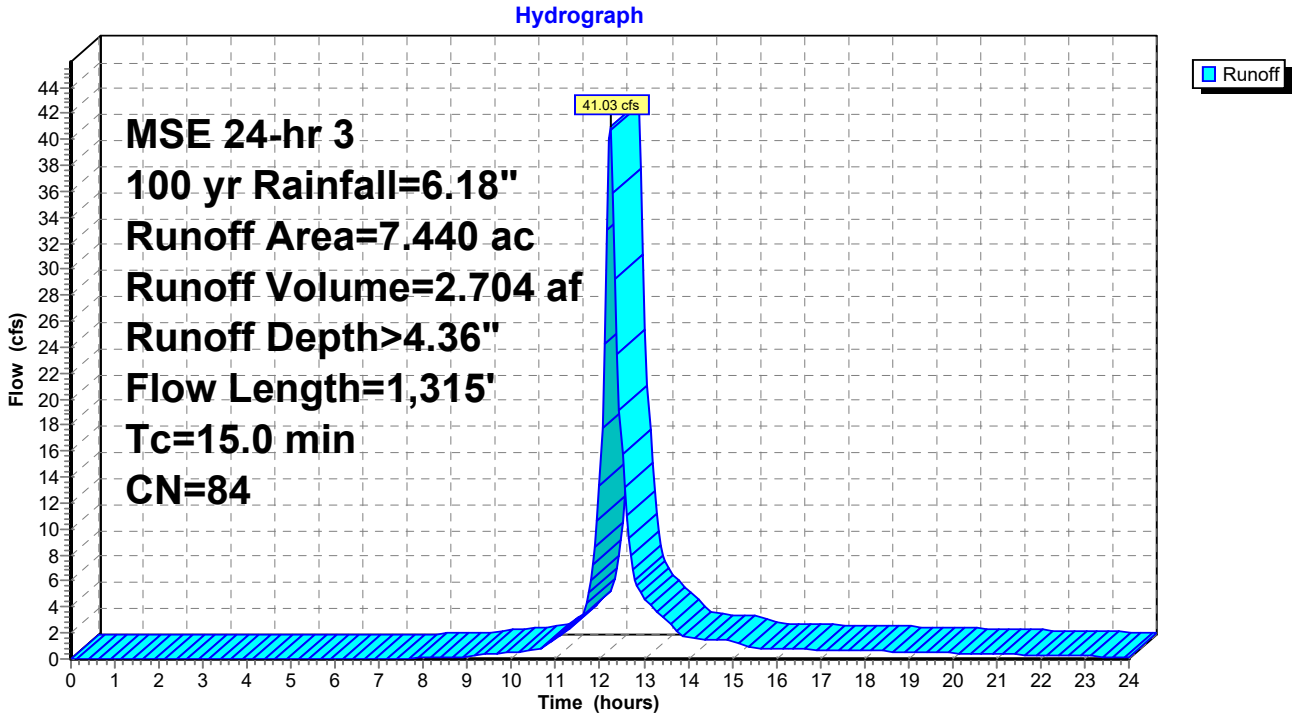
Runoff = 41.03 cfs @ 12.23 hrs, Volume= 2.704 af, Depth> 4.36"
Routed to Pond 11P : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	2.970	98	impervious
*	3.640	74	lawn - C
*	0.230	98	water
*	0.070	70	woods - C
*	0.530	71	meadow - C
	7.440	84	Weighted Average
	4.240		56.99% Pervious Area
	3.200		43.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	70	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
1.6	190	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
3.5	1,055		5.00		**Direct Entry,**
15.0	1,315	Total			

Subcatchment 11: Subarea



Summary for Subcatchment 12: Subarea

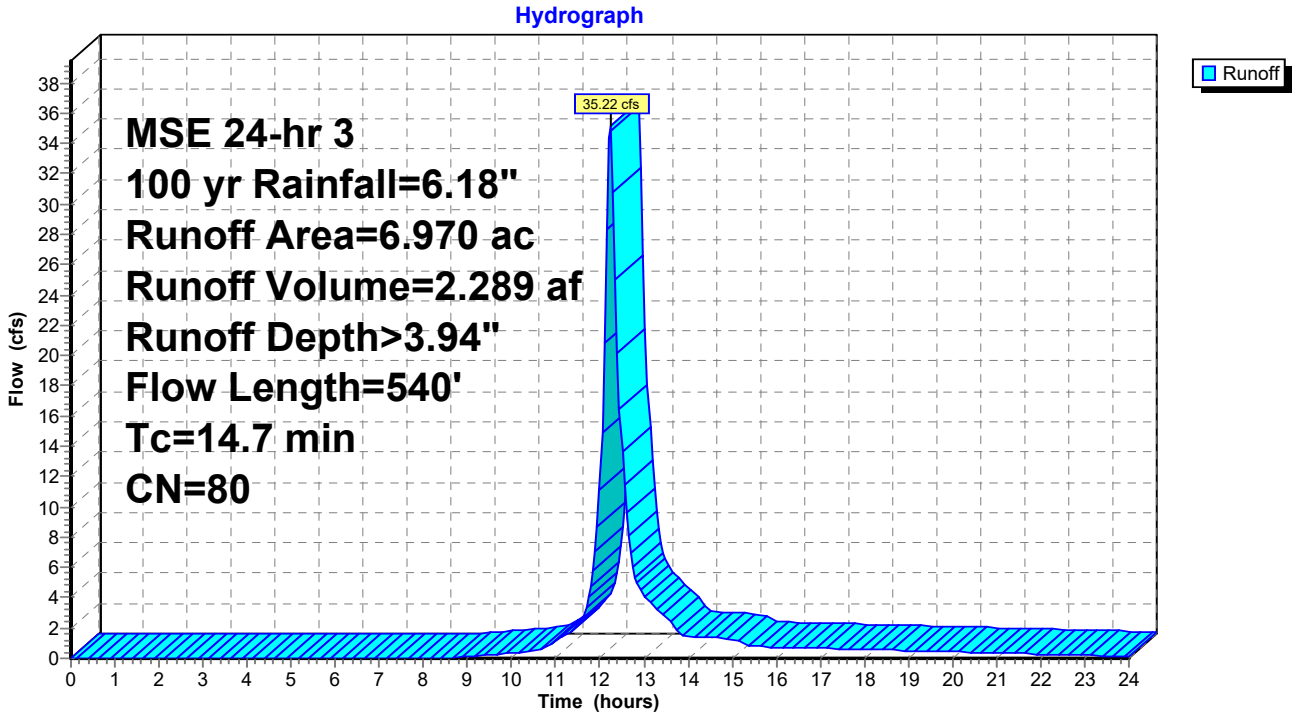
Runoff = 35.22 cfs @ 12.23 hrs, Volume= 2.289 af, Depth> 3.94"
Routed to Pond 12P : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	1.900	98	impervious
*	2.750	74	lawn - C
*	0.130	98	water
*	1.070	70	woods - C
*	1.120	71	meadow - C
	6.970	80	Weighted Average
	4.940		70.88% Pervious Area
	2.030		29.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
0.8	150	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
2.1	290	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
14.7	540	Total			

Subcatchment 12: Subarea



Summary for Subcatchment 13: Subarea

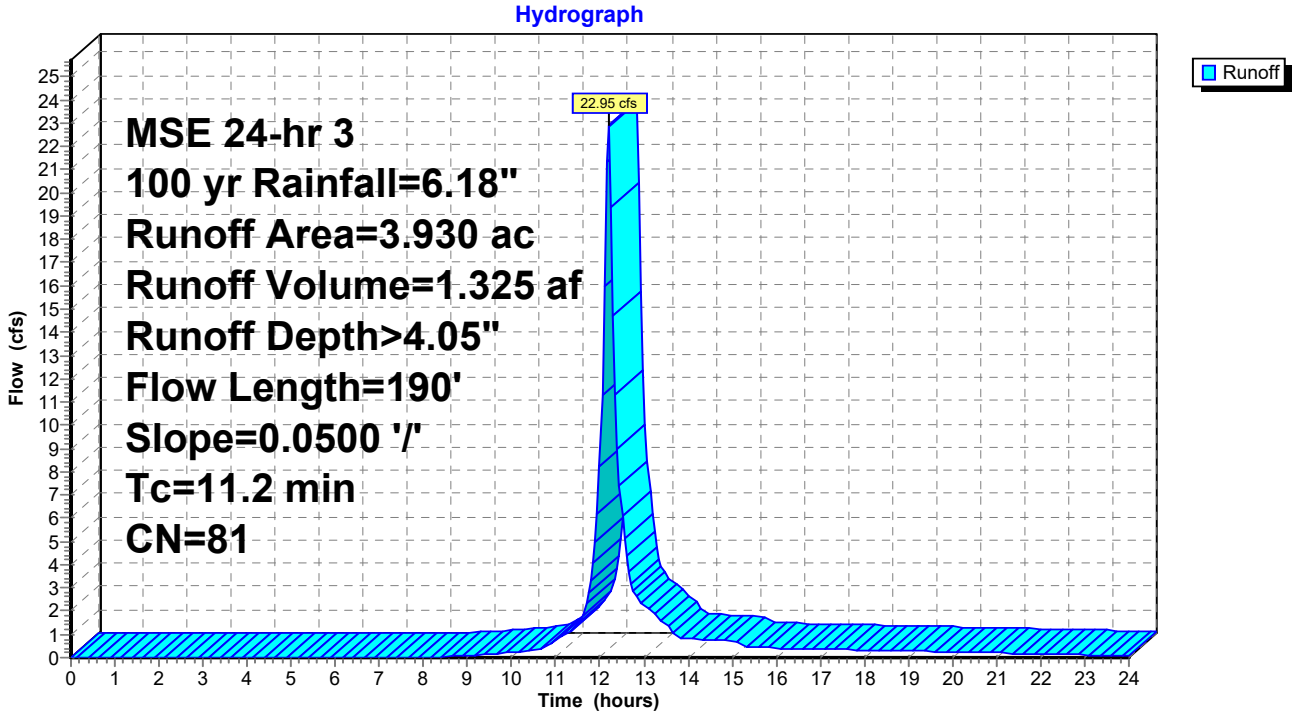
Runoff = 22.95 cfs @ 12.19 hrs, Volume= 1.325 af, Depth> 4.05"
Routed to Pond 13P : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	1.010	98	impervious
*	2.350	74	lawn - C
*	0.200	98	water
*	0.280	71	meadow - C
*	0.090	70	woods - C
	3.930	81	Weighted Average
	2.720		69.21% Pervious Area
	1.210		30.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.0500	0.15		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
0.4	90	0.0500	3.60		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
11.2	190	Total			

Subcatchment 13: Subarea



Summary for Subcatchment 14: Subarea

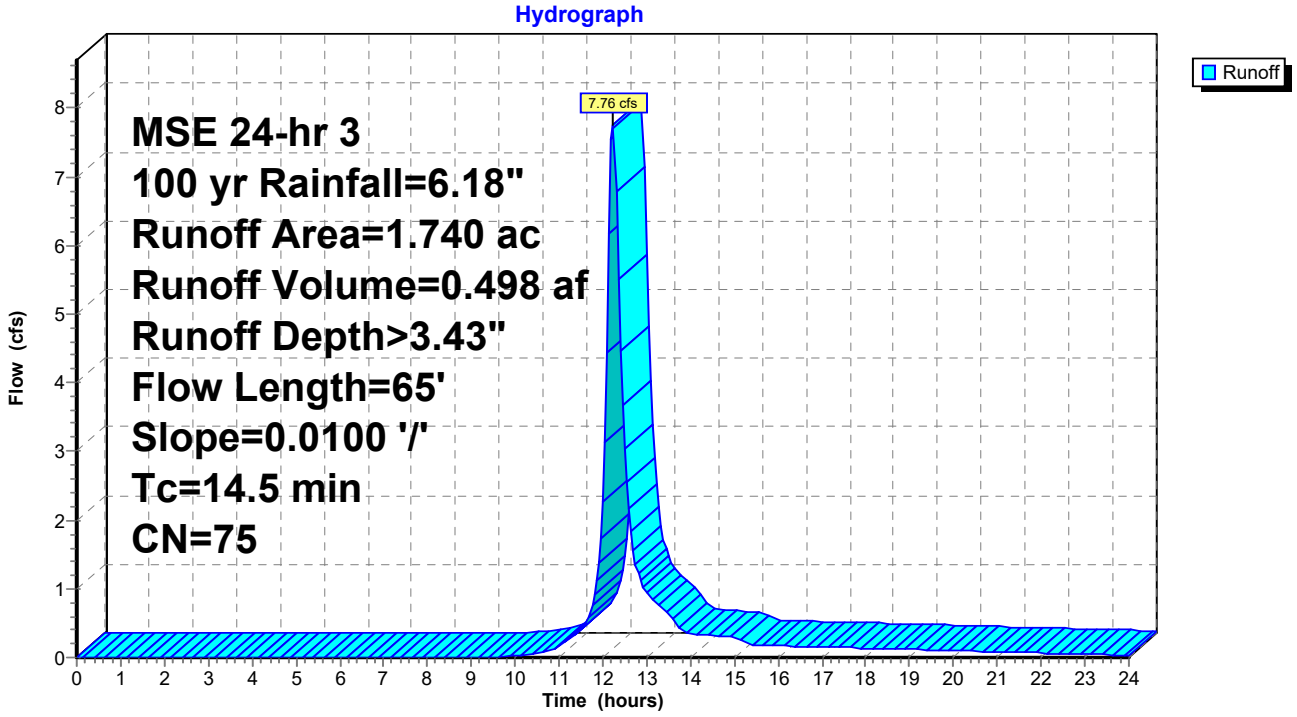
Runoff = 7.76 cfs @ 12.23 hrs, Volume= 0.498 af, Depth> 3.43"
Routed to Link 2L : Northwest Subwatershed

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.130	98	impervious
*	1.290	74	lawn - C
*	0.200	70	woods - C
*	0.120	71	meadow - C
	1.740	75	Weighted Average
	1.610		92.53% Pervious Area
	0.130		7.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	65	0.0100	0.07		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"

Subcatchment 14: Subarea



Summary for Subcatchment 15: Subarea

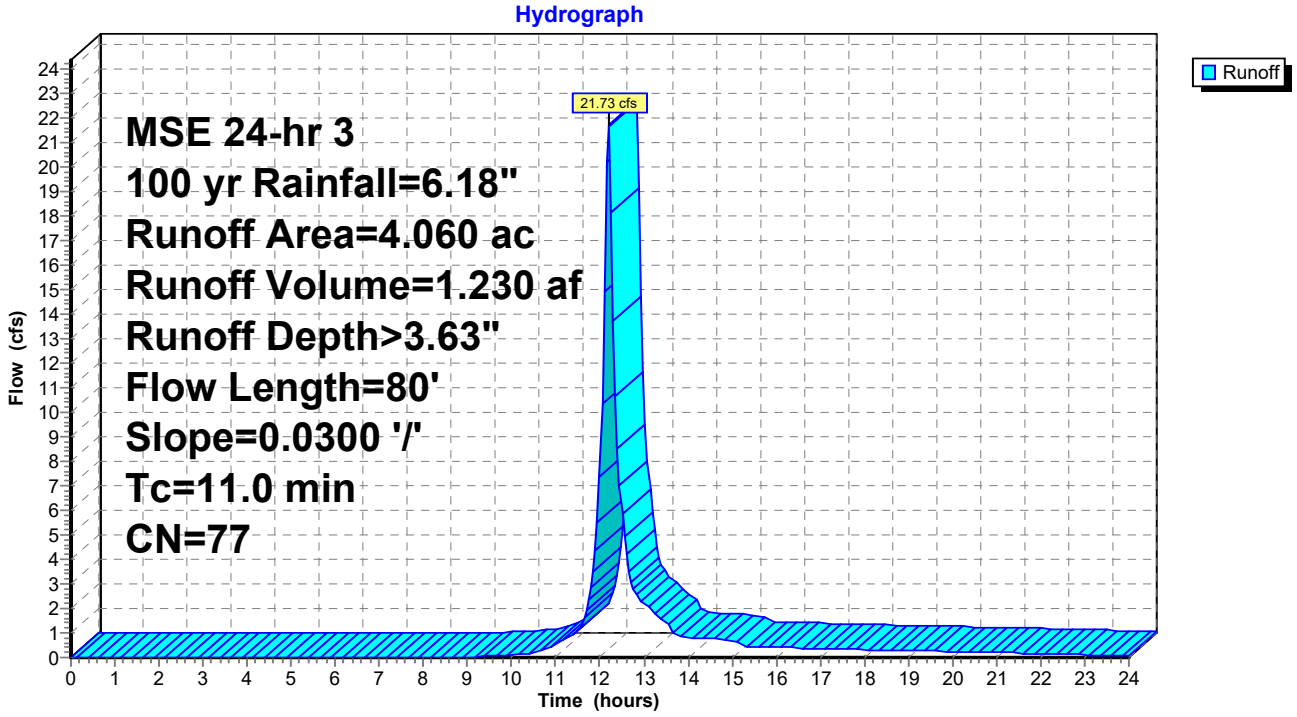
Runoff = 21.73 cfs @ 12.19 hrs, Volume= 1.230 af, Depth> 3.63"
Routed to Link 3L : North Subwatershed (drainage swale)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.720	98	impervious
*	2.060	74	lawn - C
*	1.230	71	meadow - C
*	0.050	70	woods - C
	4.060	77	Weighted Average
	3.340		82.27% Pervious Area
	0.720		17.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0	80	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"

Subcatchment 15: Subarea



Summary for Subcatchment 16: Subarea

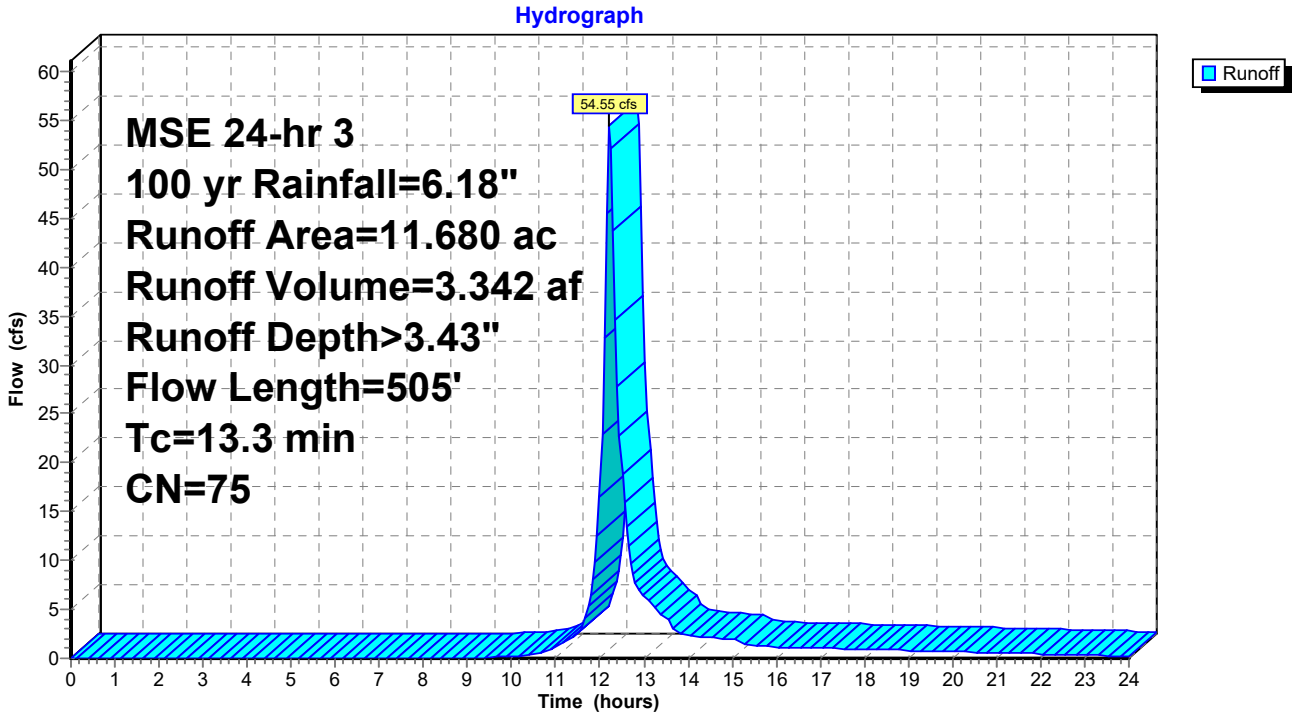
Runoff = 54.55 cfs @ 12.22 hrs, Volume= 3.342 af, Depth> 3.43"
Routed to Link 4L : Southeast Subwatershed

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	1.010	98	impervious
*	0.290	98	offsite road
*	2.980	74	lawn - C
*	0.510	74	offsite lawn (ROW) - C
*	1.730	70	woods - C
*	5.160	71	meadow - C
	11.680	75	Weighted Average
	10.380		88.87% Pervious Area
	1.300		11.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0400	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
0.4	85	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.1	20	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.0	300	0.0900	4.83		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
13.3	505	Total			

Subcatchment 16: Subarea



Summary for Subcatchment 17: Subarea

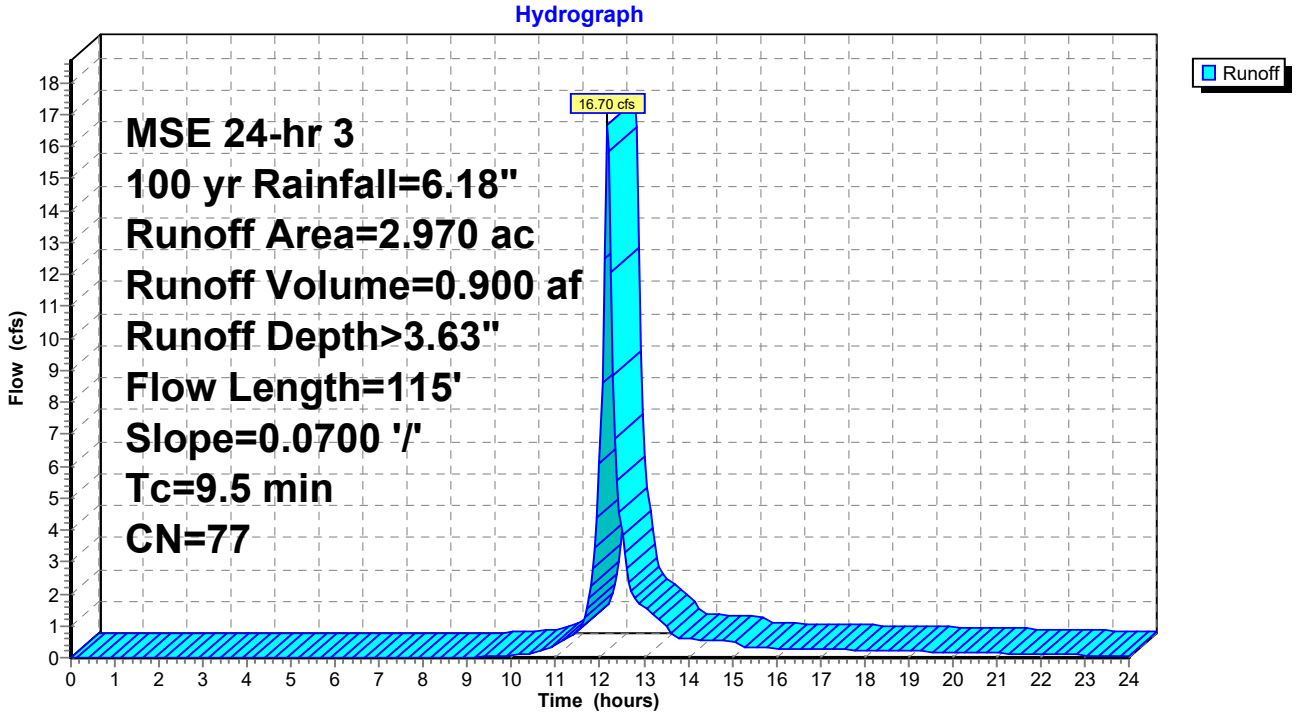
Runoff = 16.70 cfs @ 12.17 hrs, Volume= 0.900 af, Depth> 3.63"
Routed to Link 1L : West Subwatershed

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.560	98	impervious
*	0.960	74	lawn - C
*	1.450	71	meadow - C
	2.970	77	Weighted Average
	2.410		81.14% Pervious Area
	0.560		18.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0700	0.18		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.70"
0.1	15	0.0700	4.26		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.5	115	Total			

Subcatchment 17: Subarea



Summary for Pond 1P&B: Basin 1.1B, Pond 1.2P, & Basin 1.2B combined

Inflow Area = 12.420 ac, 31.72% Impervious, Inflow Depth > 4.04" for 100 yr event
Inflow = 63.16 cfs @ 12.24 hrs, Volume= 4.183 af
Outflow = 4.16 cfs @ 13.62 hrs, Volume= 2.455 af, Atten= 93%, Lag= 83.3 min
Discarded = 0.17 cfs @ 13.62 hrs, Volume= 0.165 af
Primary = 3.99 cfs @ 13.62 hrs, Volume= 2.291 af
Routed to Pond 2B : Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 937.78' @ 13.62 hrs Surf.Area= 1.046 ac Storage= 2.772 af

Plug-Flow detention time= 277.6 min calculated for 2.450 af (59% of inflow)
Center-of-Mass det. time= 201.1 min (1,000.4 - 799.3)

Volume	Invert	Avail.Storage	Storage Description
#1	934.00'	2.283 af	**Basin 1.1B (Conic)**Listed below (Recalc)
#2	934.70'	0.937 af	**Pond 1.2P (Conic)**Listed below (Recalc) -Impervious
#3	933.70'	3.945 af	**Basin 1.2B (Conic)**Listed below (Recalc)
		7.165 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
934.00	0.160	0.0	0.000	0.000	0.160
935.00	0.160	30.0	0.048	0.048	0.167
936.00	0.220	100.0	0.189	0.237	0.227
937.00	0.290	100.0	0.254	0.491	0.298
938.00	0.380	100.0	0.334	0.825	0.388
939.00	0.710	100.0	0.536	1.362	0.719
940.00	1.150	100.0	0.921	2.283	1.159

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
934.70	0.110	0.000	0.000	0.110
935.00	0.110	0.033	0.033	0.112
936.00	0.140	0.125	0.158	0.142
937.00	0.170	0.155	0.312	0.173
938.00	0.190	0.180	0.492	0.194
939.00	0.220	0.205	0.697	0.225
940.00	0.260	0.240	0.937	0.266

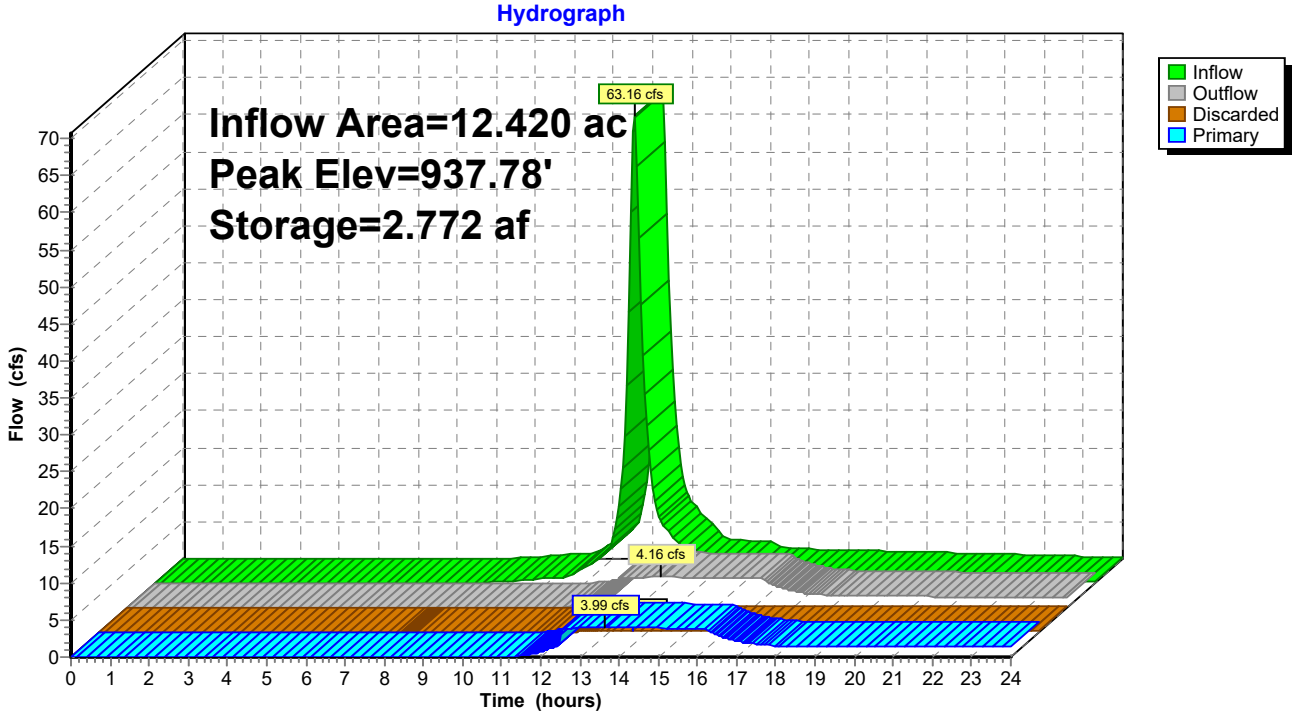
Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
933.70	0.310	0.0	0.000	0.000	0.310
934.70	0.310	30.0	0.093	0.093	0.319
935.00	0.340	100.0	0.097	0.190	0.350
936.00	0.440	100.0	0.389	0.579	0.450
937.00	0.570	100.0	0.504	1.083	0.581
938.00	0.720	100.0	0.644	1.727	0.731
939.00	1.000	100.0	0.856	2.583	1.012
940.00	1.760	100.0	1.362	3.945	1.772

Device	Routing	Invert	Outlet Devices
#1	Discarded	933.70'	**0.110 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 929.00' Phase-In= 0.01'
#2	Primary	934.70'	**12.0" Round Culvert** L= 253.5' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 934.70' / 933.00' S= 0.0067 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	934.70'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 2	937.25'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	938.50'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.17 cfs @ 13.62 hrs HW=937.78' (Free Discharge)
└**1=Exfiltration** (Controls 0.17 cfs)

Primary OutFlow Max=3.99 cfs @ 13.62 hrs HW=937.78' TW=933.72' (Dynamic Tailwater)
└**2=Culvert** (Barrel Controls 3.99 cfs @ 5.08 fps)
  └**3=Orifice** (Passes < 1.59 cfs potential flow)
  └**4=Grate** (Passes < 12.02 cfs potential flow)
└**5=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 1P&B: Basin 1.1B, Pond 1.2P, & Basin 1.2B combined



Summary for Pond 2B: Basin

Inflow Area = 14.300 ac, 34.97% Impervious, Inflow Depth > 2.54" for 100 yr event
Inflow = 14.73 cfs @ 12.15 hrs, Volume= 3.025 af
Outflow = 14.43 cfs @ 12.17 hrs, Volume= 3.006 af, Atten= 2%, Lag= 0.8 min
Discarded = 0.08 cfs @ 12.17 hrs, Volume= 0.079 af
Primary = 14.36 cfs @ 12.17 hrs, Volume= 2.927 af
Routed to Link 3L : North Subwatershed (drainage swale)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 934.01' @ 12.17 hrs Surf.Area= 0.040 ac Storage= 0.036 af

Plug-Flow detention time= 6.0 min calculated for 3.006 af (99% of inflow)
Center-of-Mass det. time= 2.8 min (948.9 - 946.1)

Volume	Invert	Avail.Storage	Storage Description
#1	932.00'	0.085 af	**Custom Stage Data (Conic)** Listed below (Recalc)

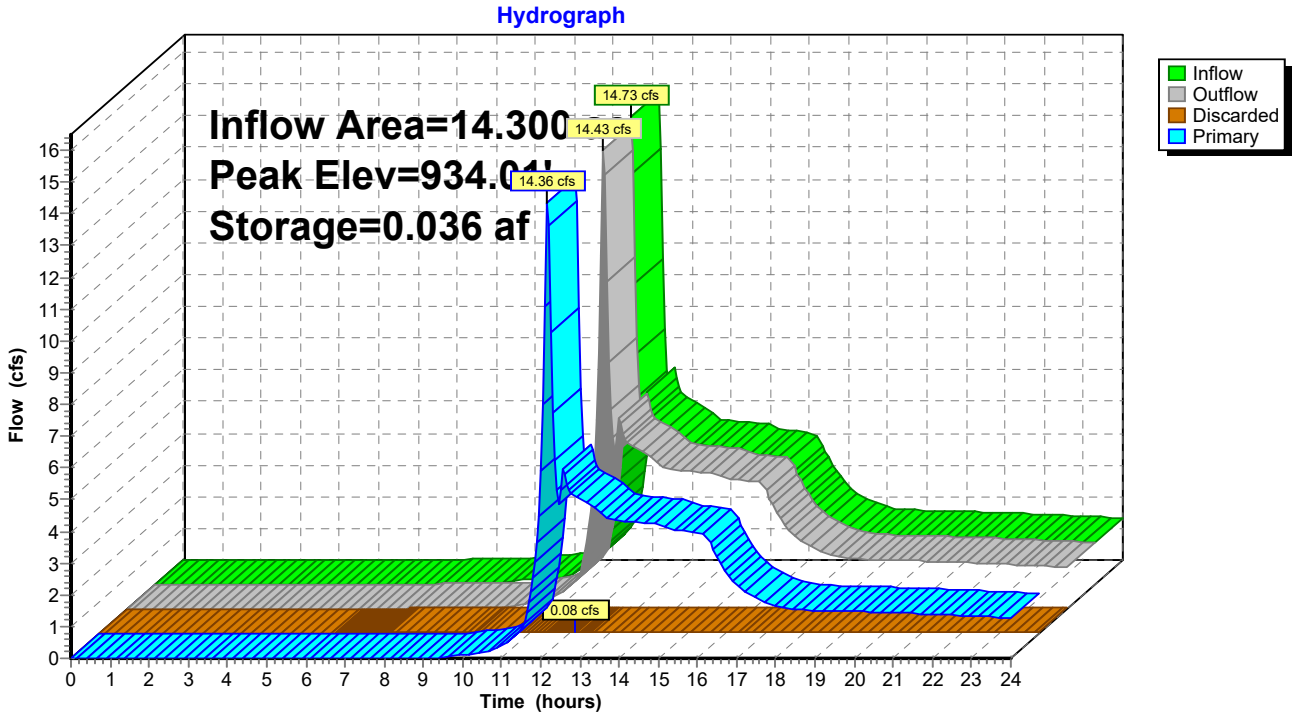
Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
932.00	0.020	0.0	0.000	0.000	0.020
933.00	0.020	30.0	0.006	0.006	0.022
934.00	0.040	100.0	0.029	0.035	0.043
935.00	0.060	100.0	0.050	0.085	0.063

Device	Routing	Invert	Outlet Devices
#1	Discarded	932.00'	**1.630 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 925.50' Phase-In= 0.01'
#2	Primary	933.00'	**12.0" Round Culvert** L= 20.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 933.00' / 932.00' S= 0.0500 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Primary	933.50'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.08 cfs @ 12.17 hrs HW=934.00' (Free Discharge)
└**1=Exfiltration** (Controls 0.08 cfs)

Primary OutFlow Max=13.94 cfs @ 12.17 hrs HW=934.00' TW=0.00' (Dynamic Tailwater)
├**2=Culvert** (Inlet Controls 2.68 cfs @ 3.41 fps)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 11.26 cfs @ 1.79 fps)

Pond 2B: Basin



Summary for Pond 3P: Pond

Inflow Area = 16.000 ac, 34.69% Impervious, Inflow Depth > 3.16" for 100 yr event
Inflow = 63.20 cfs @ 12.22 hrs, Volume= 4.214 af
Outflow = 30.26 cfs @ 12.42 hrs, Volume= 3.513 af, Atten= 52%, Lag= 12.3 min
Primary = 30.26 cfs @ 12.42 hrs, Volume= 3.513 af
Routed to Link 1L : West Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 932.00' @ 12.42 hrs Surf.Area= 0.430 ac Storage= 1.614 af

Plug-Flow detention time= 115.0 min calculated for 3.513 af (83% of inflow)
Center-of-Mass det. time= 61.0 min (854.3 - 793.4)

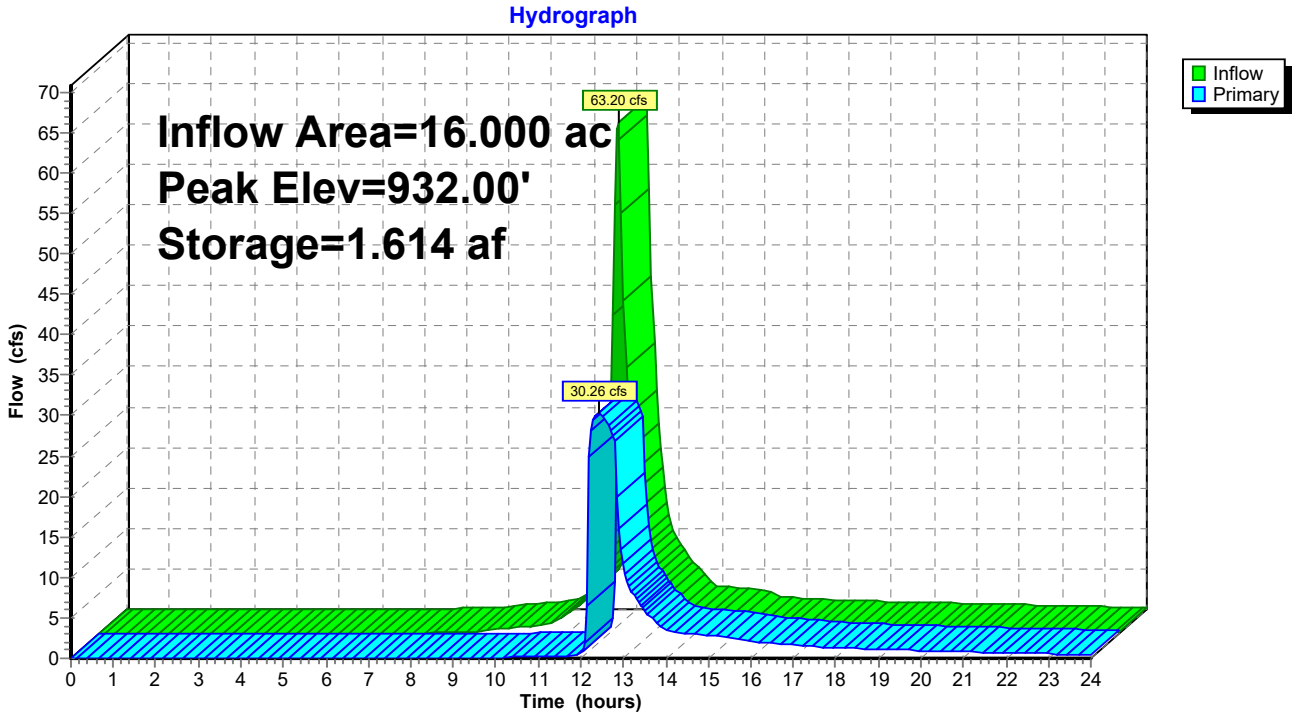
Volume	Invert	Avail.Storage	Storage Description
#1	927.00'	2.069 af	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
927.00	0.220	0.000	0.000	0.220
928.00	0.260	0.240	0.240	0.261
929.00	0.300	0.280	0.519	0.302
930.00	0.340	0.320	0.839	0.343
931.00	0.390	0.365	1.204	0.394
932.00	0.430	0.410	1.614	0.435
933.00	0.480	0.455	2.069	0.487

Device	Routing	Invert	Outlet Devices
#1	Primary	927.00'	**24.0" Round Culvert** L= 60.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 927.00' / 926.00' S= 0.0167 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	927.00'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	929.50'	**1.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 1	930.50'	**48.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	932.00'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=30.23 cfs @ 12.42 hrs HW=931.99' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Inlet Controls 30.23 cfs @ 9.62 fps)
  - **2=Orifice** (Passes < 0.52 cfs potential flow)
  - **3=Sharp-Crested Rectangular Weir** (Passes < 5.52 cfs potential flow)
  - **4=Grate** (Passes < 73.93 cfs potential flow)
- **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: Pond


Hydrograph
Inflow Area=16.000 ac
Peak Elev=932.00'
Storage=1.614 af
63.20 cfs
30.26 cfs
Inflow
Primary
Flow (cfs)
Time (hours)
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond 4B: Basin

Inflow Area = 4.910 ac, 11.81% Impervious, Inflow Depth > 3.43" for 100 yr event
Inflow = 23.21 cfs @ 12.21 hrs, Volume= 1.405 af
Outflow = 4.45 cfs @ 12.67 hrs, Volume= 1.404 af, Atten= 81%, Lag= 27.5 min
Discarded = 2.23 cfs @ 12.67 hrs, Volume= 1.221 af
Primary = 2.22 cfs @ 12.67 hrs, Volume= 0.183 af
Routed to Pond 3P : Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 938.15' @ 12.67 hrs Surf.Area= 0.408 ac Storage= 0.653 af

Plug-Flow detention time= 118.5 min calculated for 1.404 af (100% of inflow)
Center-of-Mass det. time= 118.3 min (926.1 - 807.8)

Volume	Invert	Avail.Storage	Storage Description
#1	936.00'	1.645 af	**Custom Stage Data (Conic)** Listed below (Recalc)

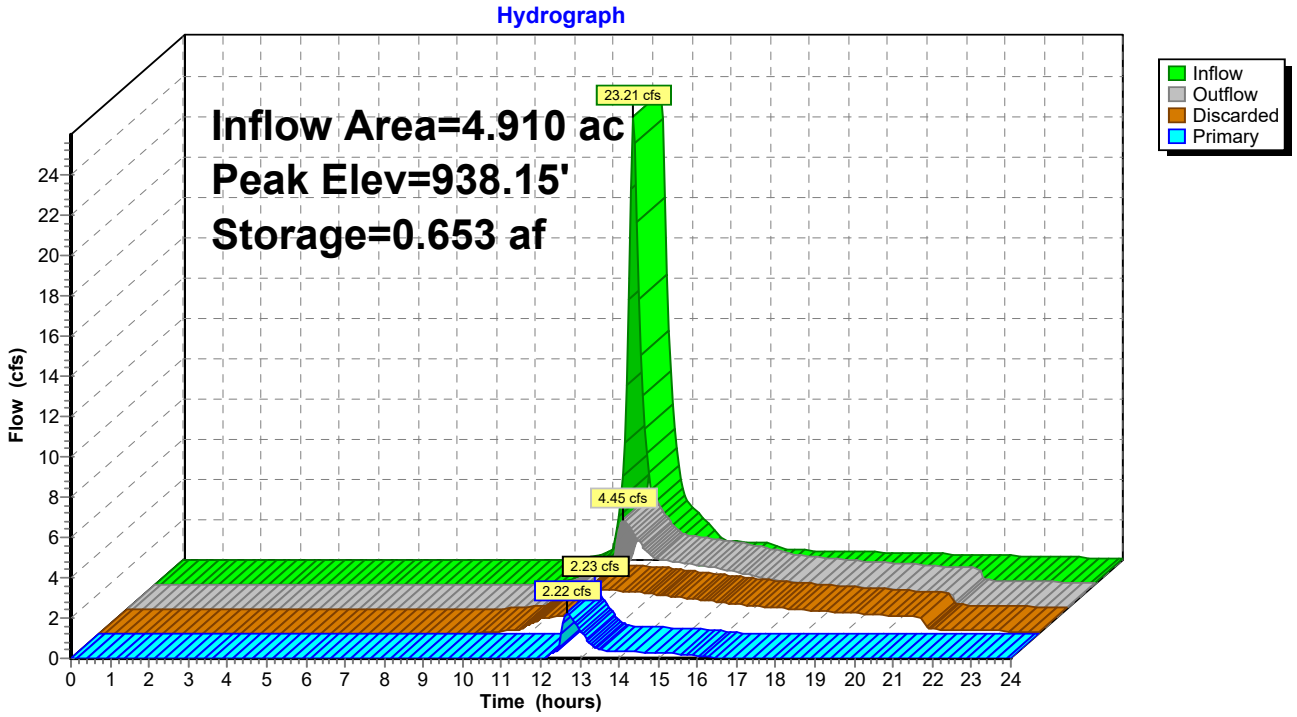
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
936.00	0.220	0.000	0.000	0.220
937.00	0.290	0.254	0.254	0.291
938.00	0.390	0.339	0.593	0.391
939.00	0.520	0.453	1.046	0.522
940.00	0.680	0.598	1.645	0.682

Device	Routing	Invert	Outlet Devices
#1	Discarded	936.00'	**3.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 933.00' Phase-In= 0.02'
#2	Primary	936.00'	**12.0" Round Culvert** L= 252.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 936.00' / 935.00' S= 0.0040 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	937.00'	**4.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 2	938.00'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=2.23 cfs @ 12.67 hrs HW=938.15' (Free Discharge)
└**1=Exfiltration** (Controls 2.23 cfs)

Primary OutFlow Max=2.20 cfs @ 12.67 hrs HW=938.15' TW=931.57' (Dynamic Tailwater)
└**2=Culvert** (Passes 2.20 cfs of 3.01 cfs potential flow)
  ├**3=Orifice** (Orifice Controls 0.42 cfs @ 4.77 fps)
  └**4=Grate** (Weir Controls 1.79 cfs @ 1.27 fps)

Pond 4B: Basin



Summary for Pond 5RG: Rain Garden

Inflow Area = 2.430 ac, 11.93% Impervious, Inflow Depth > 3.43" for 100 yr event
Inflow = 8.98 cfs @ 12.32 hrs, Volume= 0.695 af
Outflow = 0.92 cfs @ 13.56 hrs, Volume= 0.398 af, Atten= 90%, Lag= 74.4 min
Discarded = 0.02 cfs @ 13.56 hrs, Volume= 0.019 af
Primary = 0.90 cfs @ 13.56 hrs, Volume= 0.379 af
Routed to Pond 6P : Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 928.57' @ 13.56 hrs Surf.Area= 0.228 ac Storage= 0.458 af

Plug-Flow detention time= 316.9 min calculated for 0.398 af (57% of inflow)
Center-of-Mass det. time= 235.4 min (1,050.8 - 815.3)

Volume	Invert	Avail.Storage	Storage Description
#1	924.50'	0.858 af	**Custom Stage Data (Conic)** Listed below (Recalc)

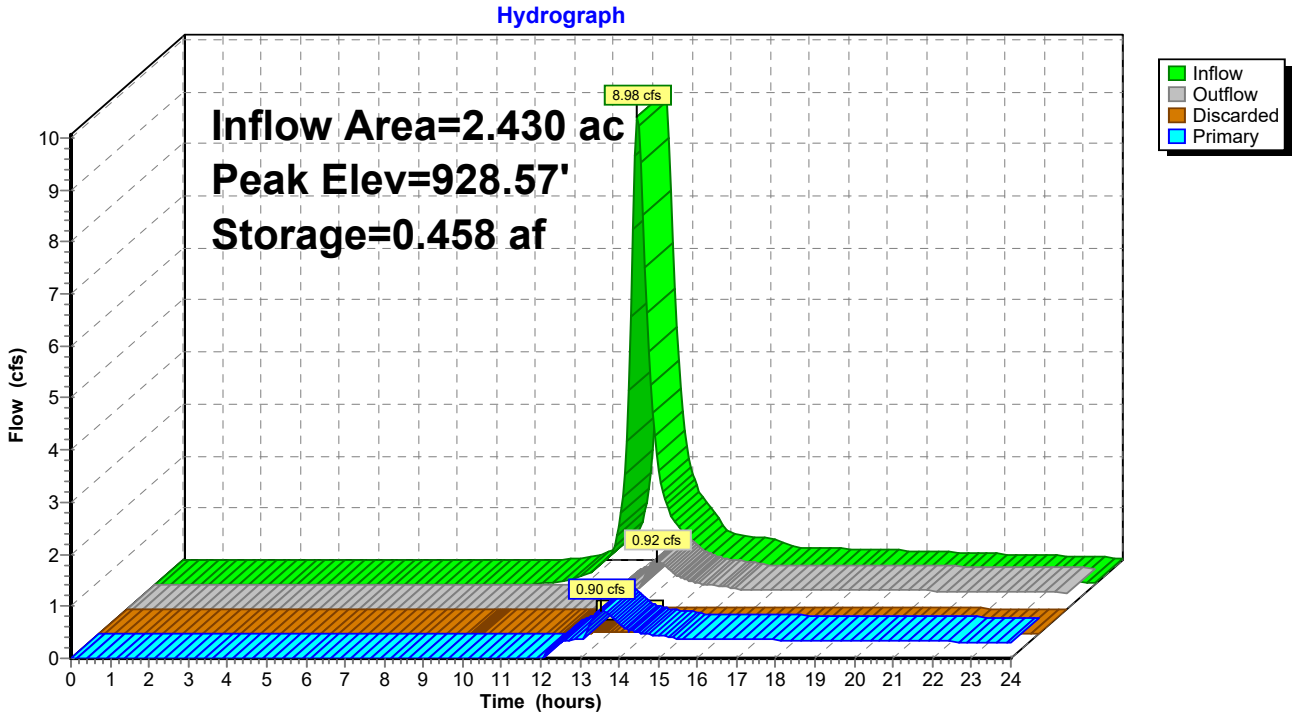
Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
924.50	0.070	0.0	0.000	0.000	0.070
925.50	0.070	30.0	0.021	0.021	0.074
926.00	0.090	100.0	0.040	0.061	0.095
927.00	0.140	100.0	0.114	0.175	0.145
928.00	0.190	100.0	0.164	0.339	0.195
929.00	0.260	100.0	0.224	0.563	0.266
930.00	0.330	100.0	0.294	0.858	0.336

Device	Routing	Invert	Outlet Devices
#1	Discarded	924.50'	**0.070 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 917.00' Phase-In= 0.01'
#2	Primary	926.00'	**12.0" Round Culvert** L= 74.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 926.00' / 925.50' S= 0.0068 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	926.00'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 2	928.50'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	929.00'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.02 cfs @ 13.56 hrs HW=928.57' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.90 cfs @ 13.56 hrs HW=928.57' TW=918.31' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.90 cfs of 4.63 cfs potential flow)
└**3=Orifice** (Orifice Controls 0.37 cfs @ 7.52 fps)
└**4=Grate** (Weir Controls 0.53 cfs @ 0.85 fps)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5RG: Rain Garden



Summary for Pond 6P: Pond

Inflow Area = 11.250 ac, 30.49% Impervious, Inflow Depth > 3.57" for 100 yr event
Inflow = 37.72 cfs @ 12.32 hrs, Volume= 3.350 af
Outflow = 11.95 cfs @ 12.76 hrs, Volume= 2.659 af, Atten= 68%, Lag= 26.6 min
Primary = 11.95 cfs @ 12.76 hrs, Volume= 2.659 af
Routed to Link 4L : Southeast Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 918.93' @ 12.76 hrs Surf.Area= 0.593 ac Storage= 1.431 af

Plug-Flow detention time= 153.3 min calculated for 2.653 af (79% of inflow)
Center-of-Mass det. time= 77.0 min (910.5 - 833.5)

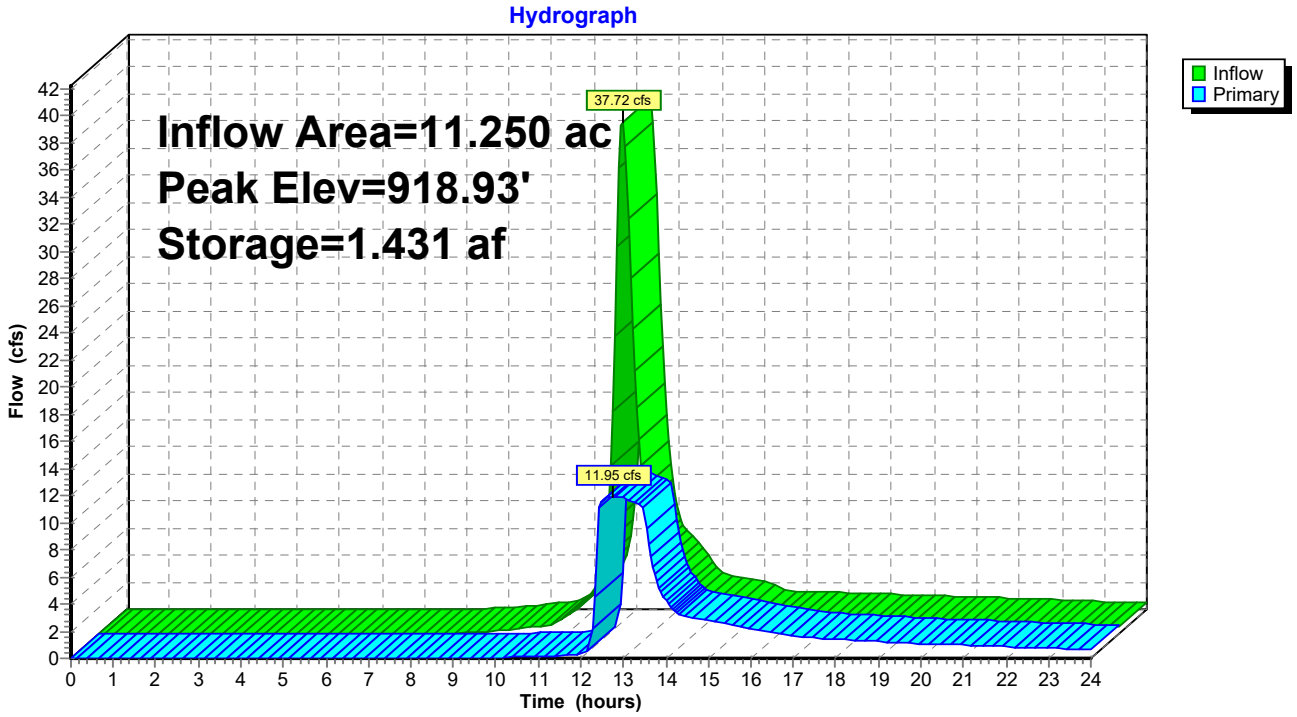
Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	2.214 af	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
914.00	0.150	0.000	0.000	0.150
915.00	0.190	0.170	0.170	0.191
916.00	0.230	0.210	0.379	0.231
917.00	0.290	0.259	0.639	0.292
918.00	0.390	0.339	0.977	0.392
919.00	0.610	0.496	1.473	0.613
920.00	0.880	0.741	2.214	0.883

Device	Routing	Invert	Outlet Devices
#1	Primary	914.00'	**15.0" Round Culvert** L= 72.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 914.00' / 913.00' S= 0.0139 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	914.00'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	917.00'	**1.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 1	918.00'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	919.00'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=11.95 cfs @ 12.76 hrs HW=918.93' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Barrel Controls 11.95 cfs @ 9.73 fps)
  - **2=Orifice** (Passes < 0.52 cfs potential flow)
  - **3=Sharp-Crested Rectangular Weir** (Passes < 4.66 cfs potential flow)
  - **4=Grate** (Passes < 27.55 cfs potential flow)
- **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 6P: Pond


Hydrograph
Inflow Area=11.250 ac
Peak Elev=918.93'
Storage=1.431 af
37.72 cfs
11.95 cfs
Inflow
Primary
Flow (cfs)
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond 7RG&P: Rain Garden 7RG & Pond 7P combined

Inflow Area = 11.570 ac, 24.29% Impervious, Inflow Depth > 3.83" for 100 yr event
Inflow = 49.28 cfs @ 12.30 hrs, Volume= 3.689 af
Outflow = 3.25 cfs @ 13.78 hrs, Volume= 2.069 af, Atten= 93%, Lag= 88.8 min
Discarded = 0.04 cfs @ 13.78 hrs, Volume= 0.036 af
Primary = 3.21 cfs @ 13.78 hrs, Volume= 2.033 af
Routed to Link 4L : Southeast Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 923.77' @ 13.78 hrs Surf.Area= 0.289 ac Storage= 2.507 af

Plug-Flow detention time= 296.3 min calculated for 2.069 af (56% of inflow)
Center-of-Mass det. time= 216.6 min (1,023.7 - 807.0)

Volume	Invert	Avail.Storage	Storage Description
#1	920.80'	0.464 af	**Basin 7B (Conic)**Listed below (Recalc)
#2	920.80'	2.376 af	**Pond 7P (Conic)**Listed below (Recalc) -Impervious
		2.840 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
920.80	0.090	0.0	0.000	0.000	0.090
921.80	0.090	30.0	0.027	0.027	0.095
922.00	0.120	100.0	0.021	0.048	0.125
923.00	0.200	100.0	0.158	0.206	0.205
924.00	0.320	100.0	0.258	0.464	0.326

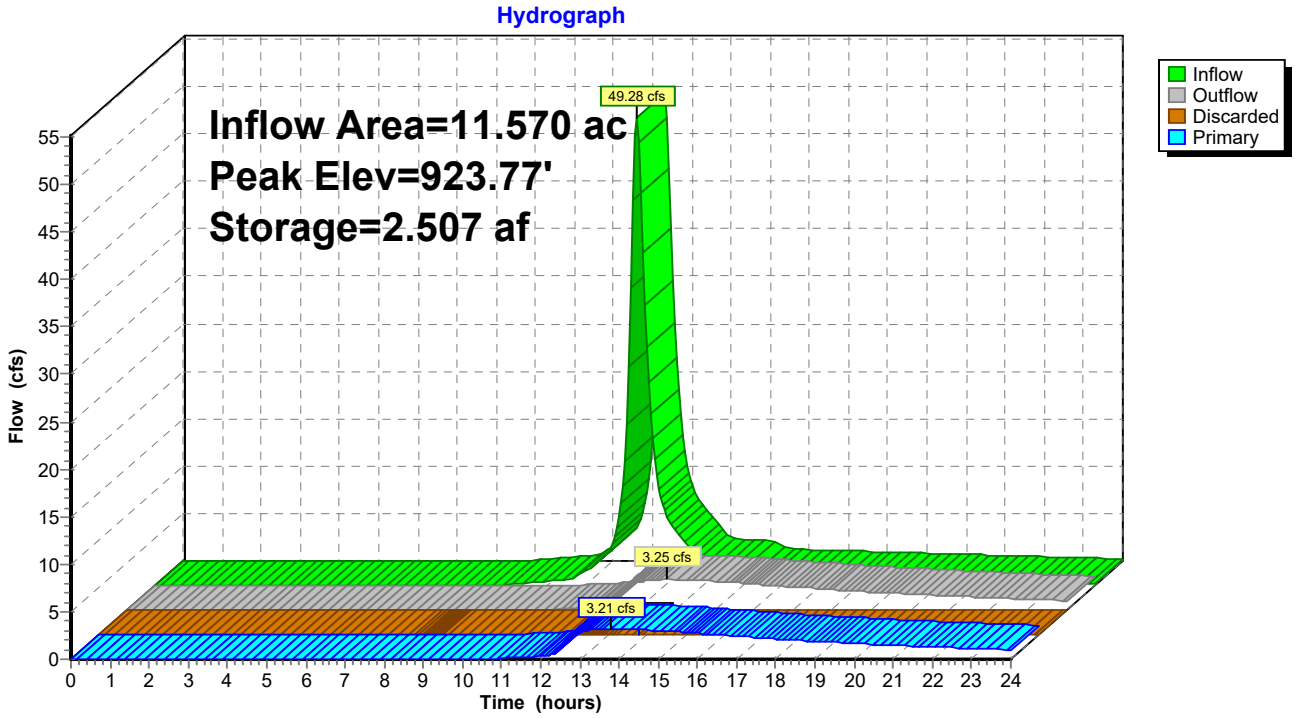
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
920.80	0.210	0.000	0.000	0.210
921.00	0.460	0.065	0.065	0.460
922.00	0.660	0.557	0.622	0.660
923.00	0.850	0.753	1.375	0.851
924.00	1.160	1.001	2.376	1.161

Device	Routing	Invert	Outlet Devices
#1	Discarded	920.80'	**0.110 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 915.00' Phase-In= 0.01'
#2	Primary	920.80'	**15.0" Round Culvert** L= 450.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 920.80' / 919.80' S= 0.0022 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#3	Device 2	920.80'	**4.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 2	922.80'	**1.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#5	Device 2	923.80'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#6	Primary	923.80'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.04 cfs @ 13.78 hrs HW=923.77' (Free Discharge)
└**1=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=3.21 cfs @ 13.78 hrs HW=923.77' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 3.21 cfs of 4.69 cfs potential flow)
  └**3=Orifice** (Orifice Controls 0.70 cfs @ 8.06 fps)
  └**4=Sharp-Crested Rectangular Weir**(Weir Controls 2.51 cfs @ 3.21 fps)
  └**5=Grate** (Controls 0.00 cfs)
└**6=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 7RG&P: Rain Garden 7RG & Pond 7P combined



Summary for Pond 8B: Basin

Inflow Area = 5.090 ac, 15.13% Impervious, Inflow Depth > 3.53" for 100 yr event
Inflow = 24.60 cfs @ 12.21 hrs, Volume= 1.499 af
Outflow = 2.30 cfs @ 13.25 hrs, Volume= 0.644 af, Atten= 91%, Lag= 62.3 min
Discarded = 0.02 cfs @ 13.25 hrs, Volume= 0.021 af
Primary = 2.28 cfs @ 13.25 hrs, Volume= 0.622 af
Routed to Pond 9P : Pond

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 918.66' @ 13.25 hrs Surf.Area= 0.362 ac Storage= 0.985 af

Plug-Flow detention time= 269.7 min calculated for 0.642 af (43% of inflow)
Center-of-Mass det. time= 183.8 min (990.1 - 806.3)

Volume	Invert	Avail.Storage	Storage Description
#1	914.50'	1.908 af	**Custom Stage Data (Conic)** Listed below (Recalc)

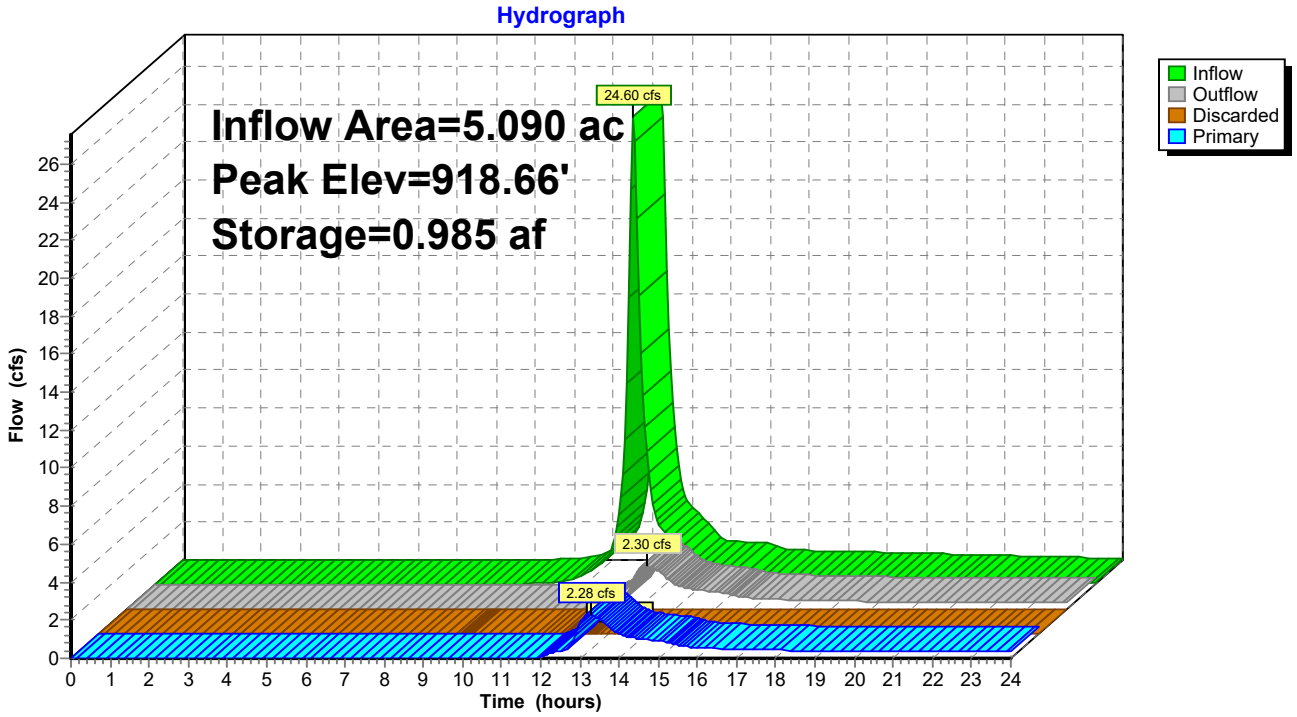
Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
914.50	0.230	0.0	0.000	0.000	0.230
915.50	0.230	30.0	0.069	0.069	0.238
916.00	0.250	100.0	0.120	0.189	0.259
917.00	0.280	100.0	0.265	0.454	0.290
918.00	0.330	100.0	0.305	0.758	0.341
919.00	0.380	100.0	0.355	1.113	0.392
920.00	0.450	100.0	0.415	1.528	0.463
920.80	0.500	100.0	0.380	1.908	0.513

Device	Routing	Invert	Outlet Devices
#1	Discarded	914.50'	**0.040 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 906.50' Phase-In= 0.01'
#2	Primary	915.75'	**12.0" Round Culvert** L= 153.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 915.75' / 915.00' S= 0.0049 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	915.75'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 2	918.50'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	919.80'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.02 cfs @ 13.25 hrs HW=918.66' (Free Discharge)
└**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=2.28 cfs @ 13.25 hrs HW=918.66' TW=902.95' (Dynamic Tailwater)
├**2=Culvert** (Passes 2.28 cfs of 4.09 cfs potential flow)
│ ├**3=Orifice** (Orifice Controls 0.39 cfs @ 8.03 fps)
│ └**4=Grate** (Weir Controls 1.89 cfs @ 1.29 fps)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8B: Basin



Summary for Pond 9P: Pond

Inflow Area = 15.840 ac, 30.05% Impervious, Inflow Depth > 3.36" for 100 yr event
Inflow = 51.91 cfs @ 12.28 hrs, Volume= 4.433 af
Outflow = 6.65 cfs @ 13.51 hrs, Volume= 2.369 af, Atten= 87%, Lag= 73.8 min
Primary = 6.65 cfs @ 13.51 hrs, Volume= 2.369 af
Routed to Link 3L : North Subwatershed (drainage swale)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 902.97' @ 13.51 hrs Surf.Area= 0.668 ac Storage= 2.660 af

Plug-Flow detention time= 267.4 min calculated for 2.369 af (53% of inflow)
Center-of-Mass det. time= 166.3 min (992.0 - 825.7)

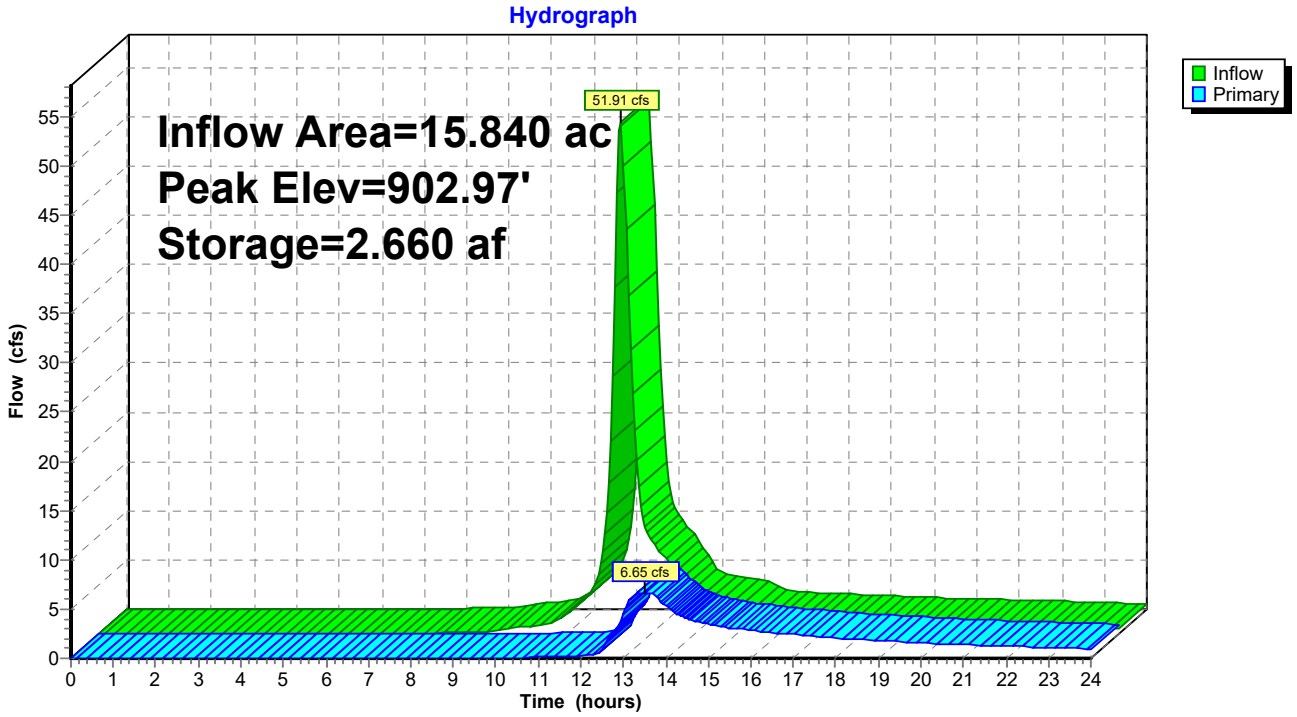
Volume	Invert	Avail.Storage	Storage Description
#1	898.00'	3.413 af	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
898.00	0.410	0.000	0.000	0.410
899.00	0.460	0.435	0.435	0.461
900.00	0.510	0.485	0.920	0.513
901.00	0.560	0.535	1.454	0.564
902.00	0.610	0.585	2.039	0.616
903.00	0.670	0.640	2.679	0.677
904.00	0.800	0.734	3.413	0.808

Device	Routing	Invert	Outlet Devices
#1	Primary	898.00'	**12.0" Round Culvert** L= 80.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 898.00' / 897.50' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	898.00'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	901.75'	**1.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 1	902.75'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	903.00'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=6.65 cfs @ 13.51 hrs HW=902.97' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Barrel Controls 6.65 cfs @ 8.47 fps)
  - **2=Orifice** (Passes < 0.52 cfs potential flow)
  - **3=Sharp-Crested Rectangular Weir** (Passes < 3.26 cfs potential flow)
  - **4=Grate** (Passes < 3.21 cfs potential flow)
- **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 9P: Pond


Hydrograph
Inflow Area=15.840 ac
Peak Elev=902.97'
Storage=2.660 af
51.91 cfs
6.65 cfs
Inflow
Primary
Flow (cfs)
Time (hours)
0 5 10 15 20 25 30 35 40 45 50 55
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Summary for Pond 10B: Basin

Inflow Area = 1.750 ac, 13.71% Impervious, Inflow Depth > 3.53" for 100 yr event
Inflow = 7.81 cfs @ 12.24 hrs, Volume= 0.515 af
Outflow = 0.35 cfs @ 14.03 hrs, Volume= 0.296 af, Atten= 96%, Lag= 107.0 min
Discarded = 0.14 cfs @ 14.03 hrs, Volume= 0.138 af
Primary = 0.21 cfs @ 14.03 hrs, Volume= 0.159 af
Routed to Link 3L : North Subwatershed (drainage swale)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 912.93' @ 14.03 hrs Surf.Area= 0.188 ac Storage= 0.345 af

Plug-Flow detention time= 316.3 min calculated for 0.296 af (58% of inflow)
Center-of-Mass det. time= 235.7 min (1,044.0 - 808.4)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	1.093 af	**Custom Stage Data (Conic)** Listed below (Recalc)

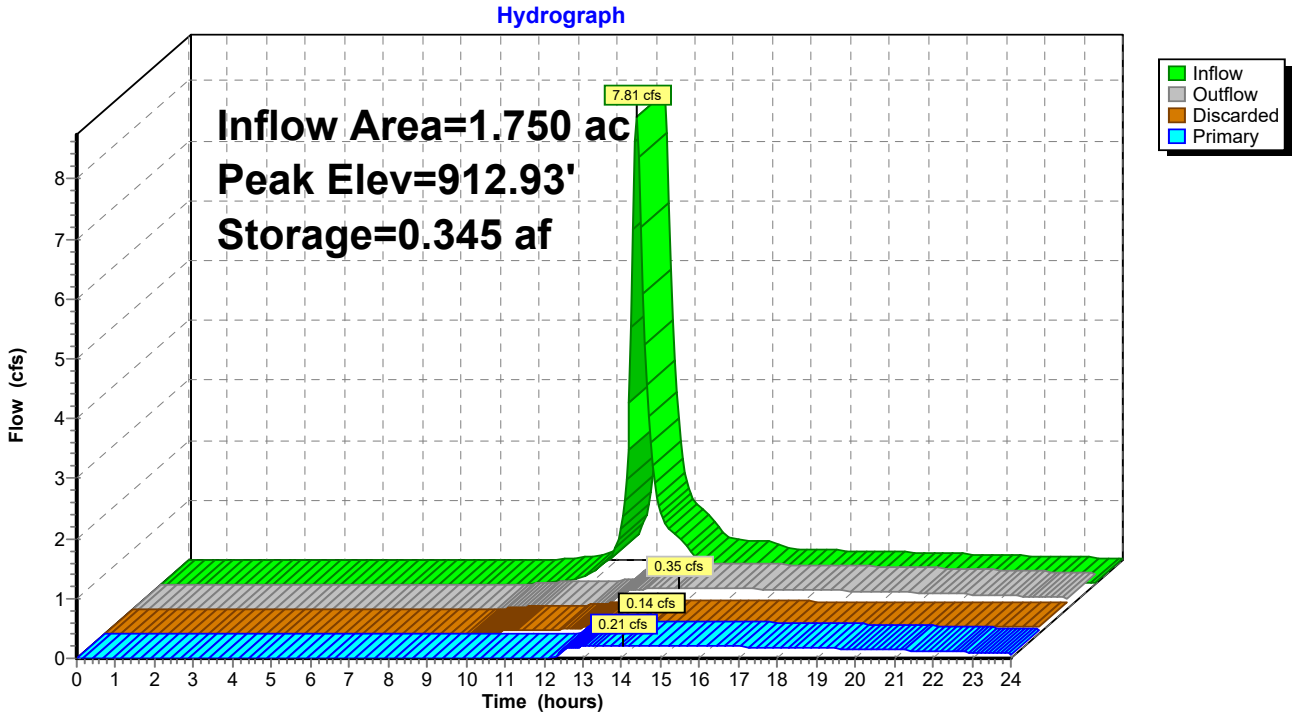
Elevation (feet)	Surf.Area (acres)	Voids (%)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
910.00	0.130	0.0	0.000	0.000	0.130
911.00	0.130	30.0	0.039	0.039	0.136
912.00	0.160	100.0	0.145	0.184	0.167
913.00	0.190	100.0	0.175	0.359	0.198
914.00	0.220	100.0	0.205	0.563	0.229
915.00	0.260	100.0	0.240	0.803	0.269
916.00	0.320	100.0	0.289	1.093	0.330

Device	Routing	Invert	Outlet Devices
#1	Discarded	910.00'	**0.500 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 905.00' Phase-In= 0.01'
#2	Primary	911.00'	**12.0" Round Culvert** L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 911.00' / 910.00' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#3	Device 2	912.00'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 2	913.00'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	915.00'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.14 cfs @ 14.03 hrs HW=912.93' (Free Discharge)
└**1=Exfiltration** (Controls 0.14 cfs)

Primary OutFlow Max=0.21 cfs @ 14.03 hrs HW=912.93' TW=0.00' (Dynamic Tailwater)
└**2=Culvert** (Passes 0.21 cfs of 4.06 cfs potential flow)
└**3=Orifice** (Orifice Controls 0.21 cfs @ 4.32 fps)
└**4=Grate** (Controls 0.00 cfs)
└**5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10B: Basin



Summary for Pond 11P: Pond

Inflow Area = 7.440 ac, 43.01% Impervious, Inflow Depth > 4.36" for 100 yr event
Inflow = 41.03 cfs @ 12.23 hrs, Volume= 2.704 af
Outflow = 14.60 cfs @ 12.52 hrs, Volume= 1.941 af, Atten= 64%, Lag= 17.6 min
Primary = 14.60 cfs @ 12.52 hrs, Volume= 1.941 af
Routed to Link 3L : North Subwatershed (drainage swale)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 916.48' @ 12.52 hrs Surf.Area= 0.492 ac Storage= 1.393 af

Plug-Flow detention time= 171.3 min calculated for 1.937 af (72% of inflow)
Center-of-Mass det. time= 104.3 min (898.0 - 793.7)

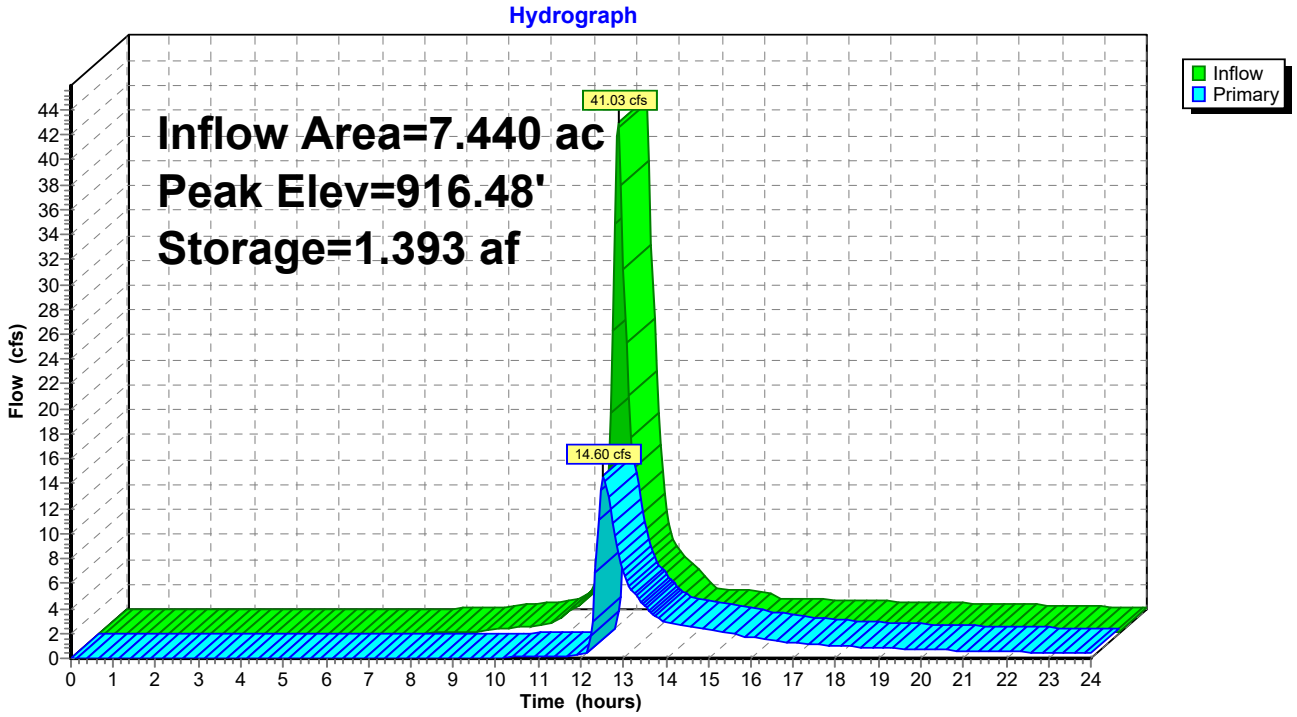
Volume	Invert	Avail.Storage	Storage Description
#1	912.50'	1.940 af	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
912.50	0.230	0.000	0.000	0.230
913.00	0.260	0.122	0.122	0.260
914.00	0.310	0.285	0.407	0.311
915.00	0.380	0.344	0.751	0.382
916.00	0.450	0.415	1.166	0.453
917.00	0.540	0.494	1.660	0.543
917.50	0.580	0.280	1.940	0.584

Device	Routing	Invert	Outlet Devices
#1	Primary	912.50'	**18.0" Round Culvert** L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 912.50' / 912.00' S= 0.0125 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	912.50'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.00'	**1.0' long x 1.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 1	916.00'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	916.50'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=14.48 cfs @ 12.52 hrs HW=916.48' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Passes 14.48 cfs of 15.29 cfs potential flow)
  - **2=Orifice** (Orifice Controls 0.46 cfs @ 9.45 fps)
  - **3=Sharp-Crested Rectangular Weir** (Orifice Controls 3.84 cfs @ 4.79 fps)
  - **4=Grate** (Weir Controls 10.18 cfs @ 2.26 fps)
- **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 11P: Pond



Summary for Pond 12P: Pond

Inflow Area = 6.970 ac, 29.12% Impervious, Inflow Depth > 3.94" for 100 yr event
Inflow = 35.22 cfs @ 12.23 hrs, Volume= 2.289 af
Outflow = 14.73 cfs @ 12.48 hrs, Volume= 2.052 af, Atten= 58%, Lag= 15.0 min
Primary = 14.73 cfs @ 12.48 hrs, Volume= 2.052 af
Routed to Link 3L : North Subwatershed (drainage swale)

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 925.90' @ 12.48 hrs Surf.Area= 0.323 ac Storage= 0.844 af

Plug-Flow detention time= 91.0 min calculated for 2.052 af (90% of inflow)
Center-of-Mass det. time= 48.1 min (849.0 - 800.8)

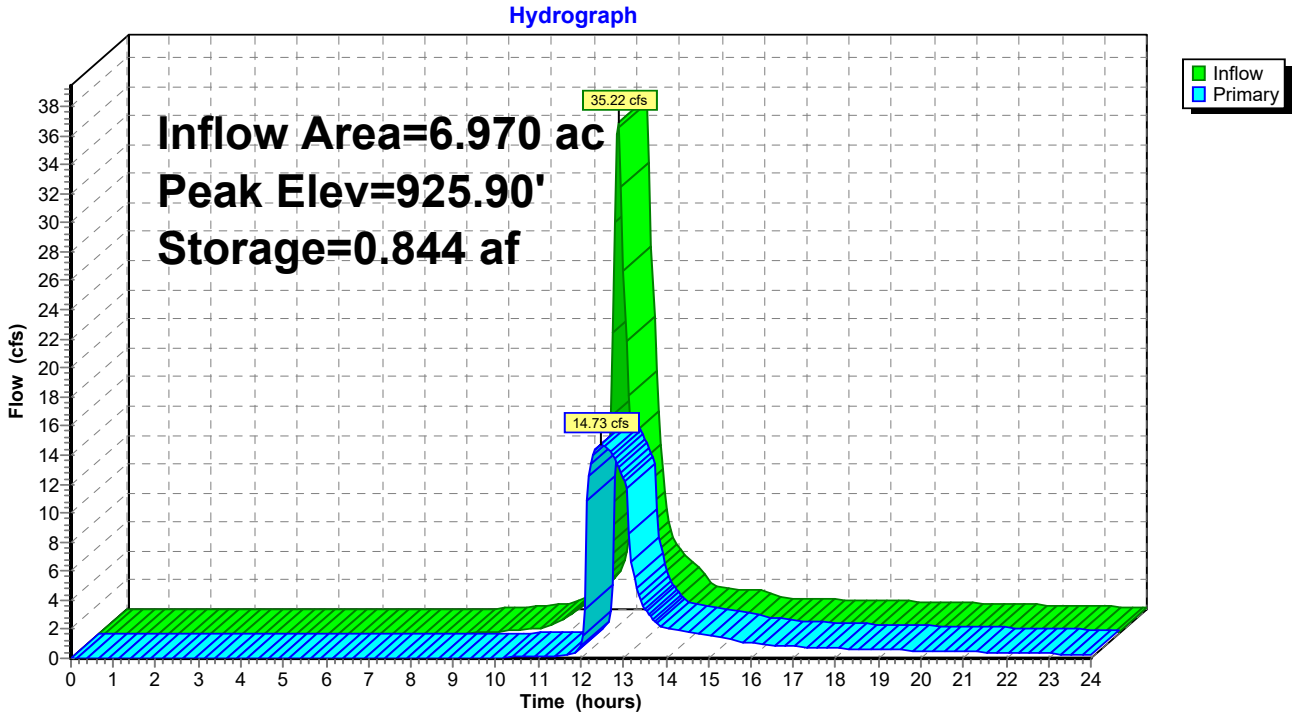
Volume	Invert	Avail.Storage	Storage Description
#1	922.00'	1.252 af	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
922.00	0.130	0.000	0.000	0.130
923.00	0.170	0.150	0.150	0.171
924.00	0.210	0.190	0.339	0.211
925.00	0.270	0.239	0.579	0.272
926.00	0.330	0.299	0.878	0.332
927.00	0.420	0.374	1.252	0.423

Device	Routing	Invert	Outlet Devices
#1	Primary	922.00'	**18.0" Round Culvert** L= 90.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 922.00' / 921.00' S= 0.0111 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	922.00'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	923.50'	**1.0' long x 0.75' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#4	Device 1	924.25'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#5	Primary	926.00'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=14.73 cfs @ 12.48 hrs HW=925.89' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Barrel Controls 14.73 cfs @ 8.33 fps)
  - **2=Orifice** (Passes < 0.46 cfs potential flow)
  - **3=Sharp-Crested Rectangular Weir** (Passes < 4.43 cfs potential flow)
  - **4=Grate** (Passes < 43.61 cfs potential flow)
- **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12P: Pond



Summary for Pond 13P: Pond

Inflow Area = 3.930 ac, 30.79% Impervious, Inflow Depth > 4.05" for 100 yr event
Inflow = 22.95 cfs @ 12.19 hrs, Volume= 1.325 af
Outflow = 7.42 cfs @ 12.45 hrs, Volume= 1.023 af, Atten= 68%, Lag= 15.7 min
Primary = 7.42 cfs @ 12.45 hrs, Volume= 1.023 af
Routed to Link 2L : Northwest Subwatershed

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 897.76' @ 12.45 hrs Surf.Area= 0.318 ac Storage= 0.633 af

Plug-Flow detention time= 193.9 min calculated for 1.023 af (77% of inflow)
Center-of-Mass det. time= 129.4 min (925.3 - 796.0)

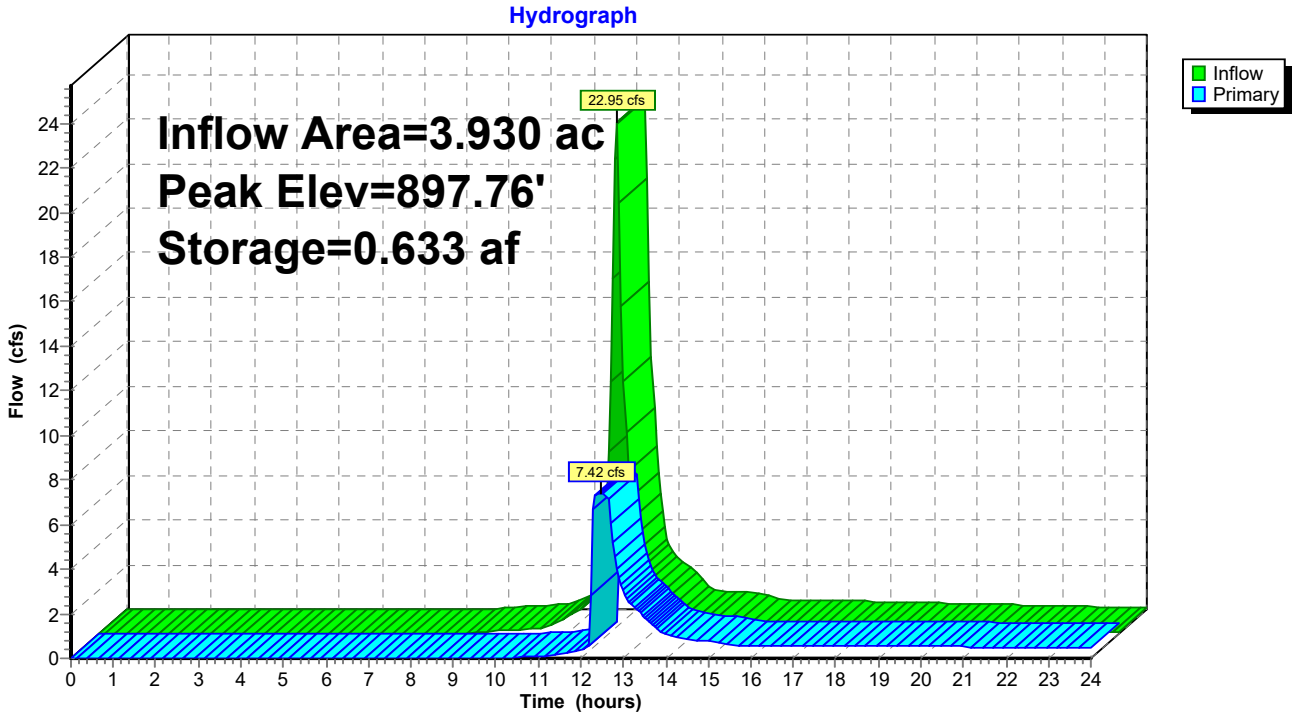
Volume	Invert	Avail.Storage	Storage Description
#1	895.30'	0.989 af	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
895.30	0.200	0.000	0.000	0.200
896.00	0.230	0.150	0.150	0.231
897.00	0.280	0.255	0.405	0.281
898.00	0.330	0.305	0.710	0.332
898.80	0.370	0.280	0.989	0.373

Device	Routing	Invert	Outlet Devices
#1	Primary	895.30'	**15.0" Round Culvert** L= 50.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 895.30' / 895.00' S= 0.0060 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Device 1	895.30'	**4.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	897.30'	**36.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#4	Primary	897.80'	**10.0' long + 5.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=7.42 cfs @ 12.45 hrs HW=897.76' TW=0.00' (Dynamic Tailwater)
- **1=Culvert** (Barrel Controls 7.42 cfs @ 6.05 fps)
  - **2=Orifice** (Passes < 0.64 cfs potential flow)
  - **3=Grate** (Passes < 9.75 cfs potential flow)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 13P: Pond

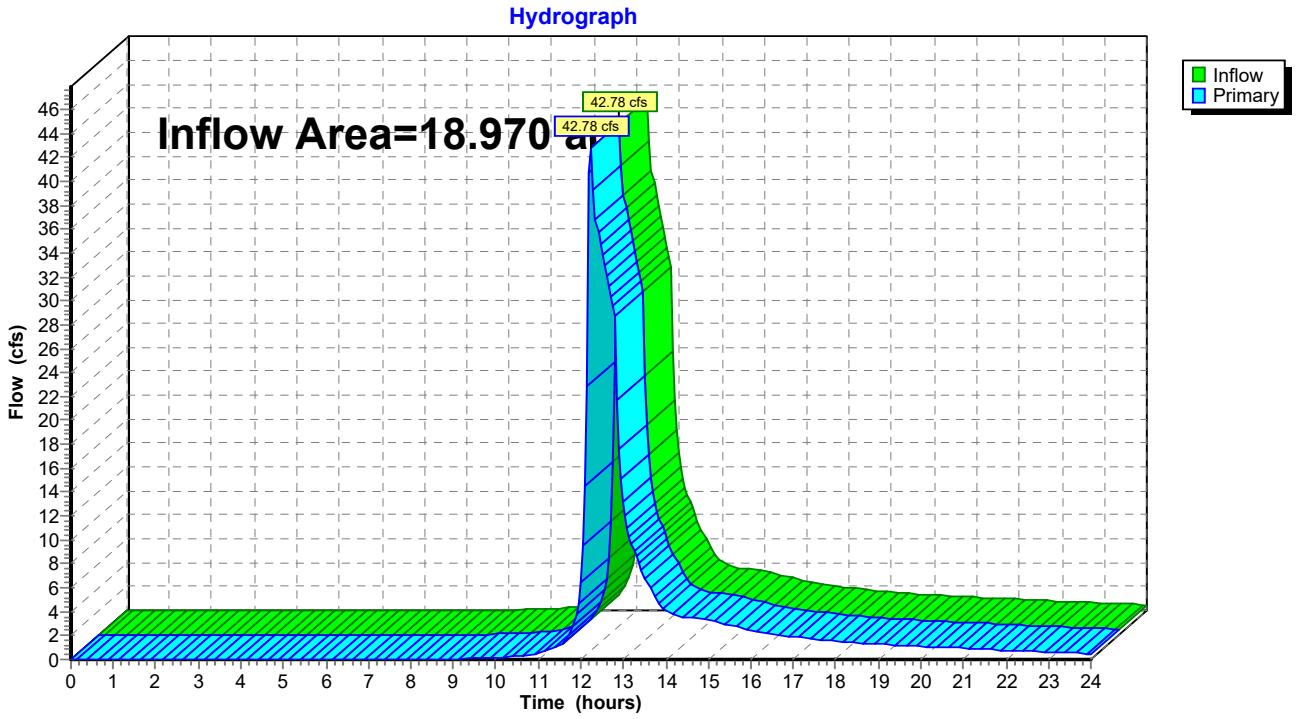


Summary for Link 1L: West Subwatershed

Inflow Area = 18.970 ac, 32.21% Impervious, Inflow Depth > 2.79" for 100 yr event
Inflow = 42.78 cfs @ 12.22 hrs, Volume= 4.412 af
Primary = 42.78 cfs @ 12.22 hrs, Volume= 4.412 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 99L

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: West Subwatershed

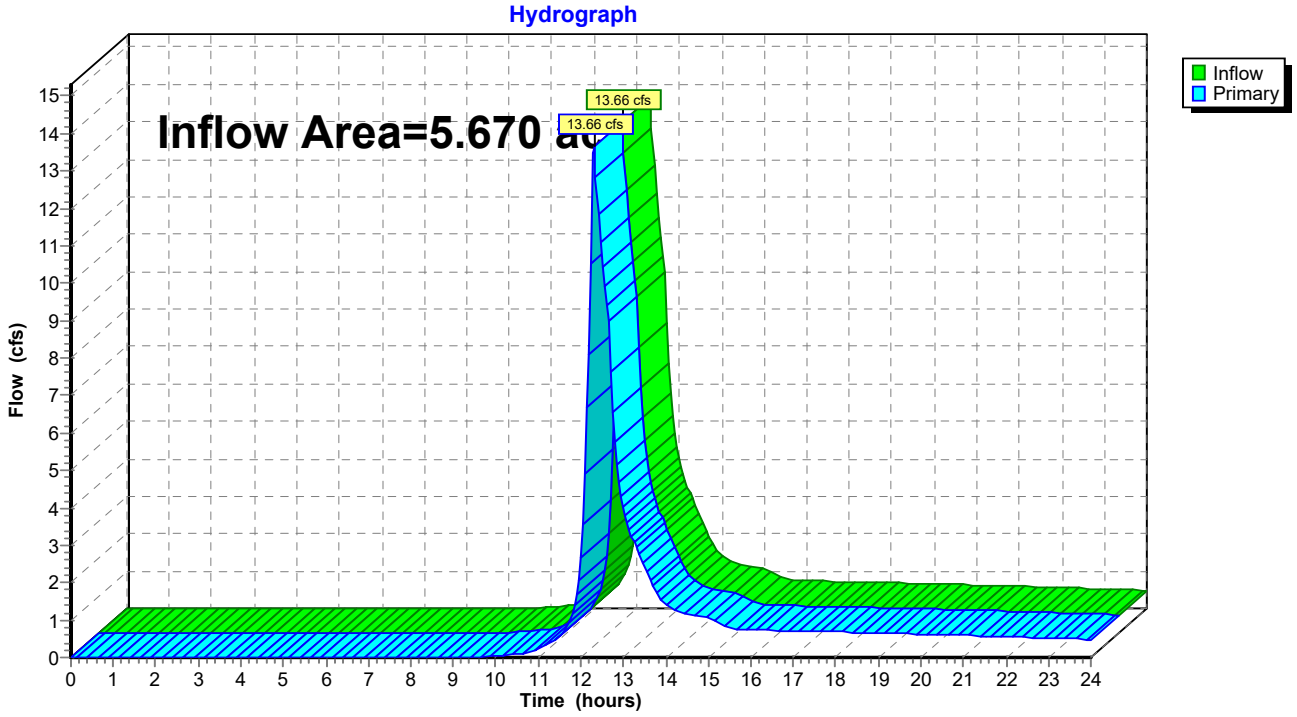


Summary for Link 2L: Northwest Subwatershed

Inflow Area = 5.670 ac, 23.63% Impervious, Inflow Depth > 3.22" for 100 yr event
Inflow = 13.66 cfs @ 12.32 hrs, Volume= 1.521 af
Primary = 13.66 cfs @ 12.32 hrs, Volume= 1.521 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 99L

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: Northwest Subwatershed

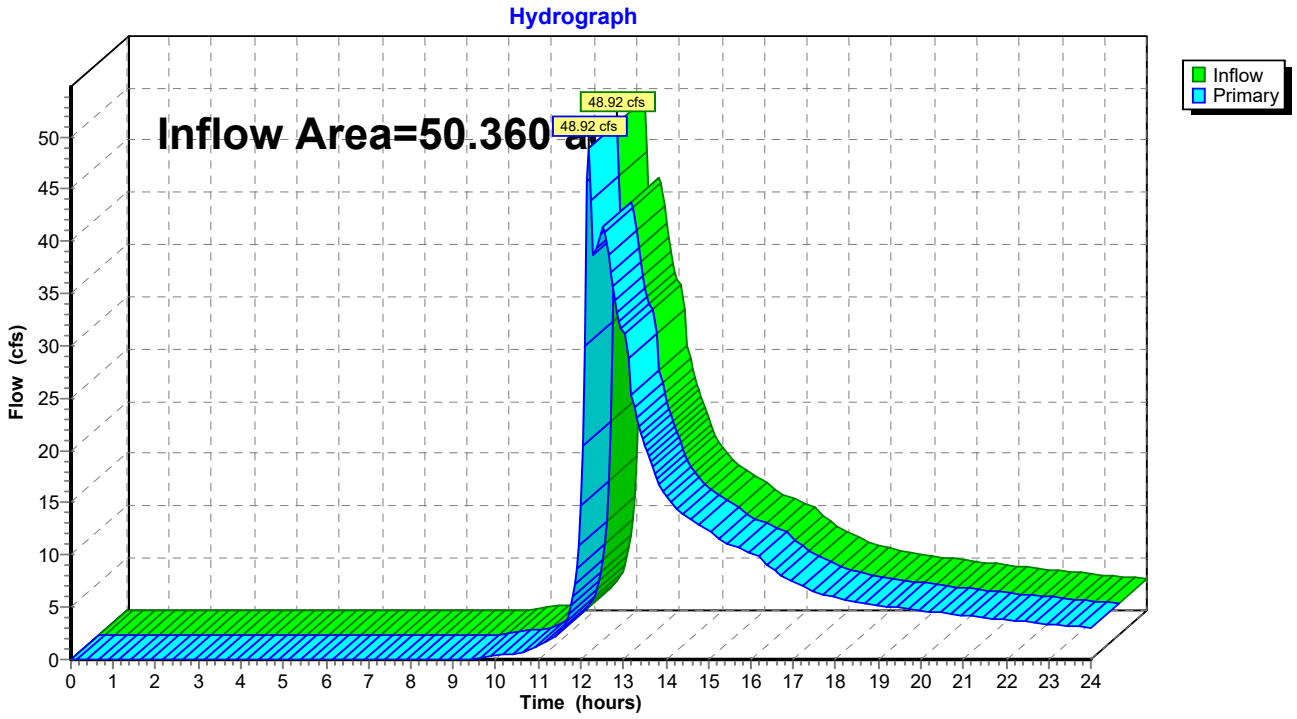


Summary for Link 3L: North Subwatershed (drainage swale)

Inflow Area = 50.360 ac, 31.67% Impervious, Inflow Depth > 2.54" for 100 yr event
Inflow = 48.92 cfs @ 12.19 hrs, Volume= 10.678 af
Primary = 48.92 cfs @ 12.19 hrs, Volume= 10.678 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 99L

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 3L: North Subwatershed (drainage swale)

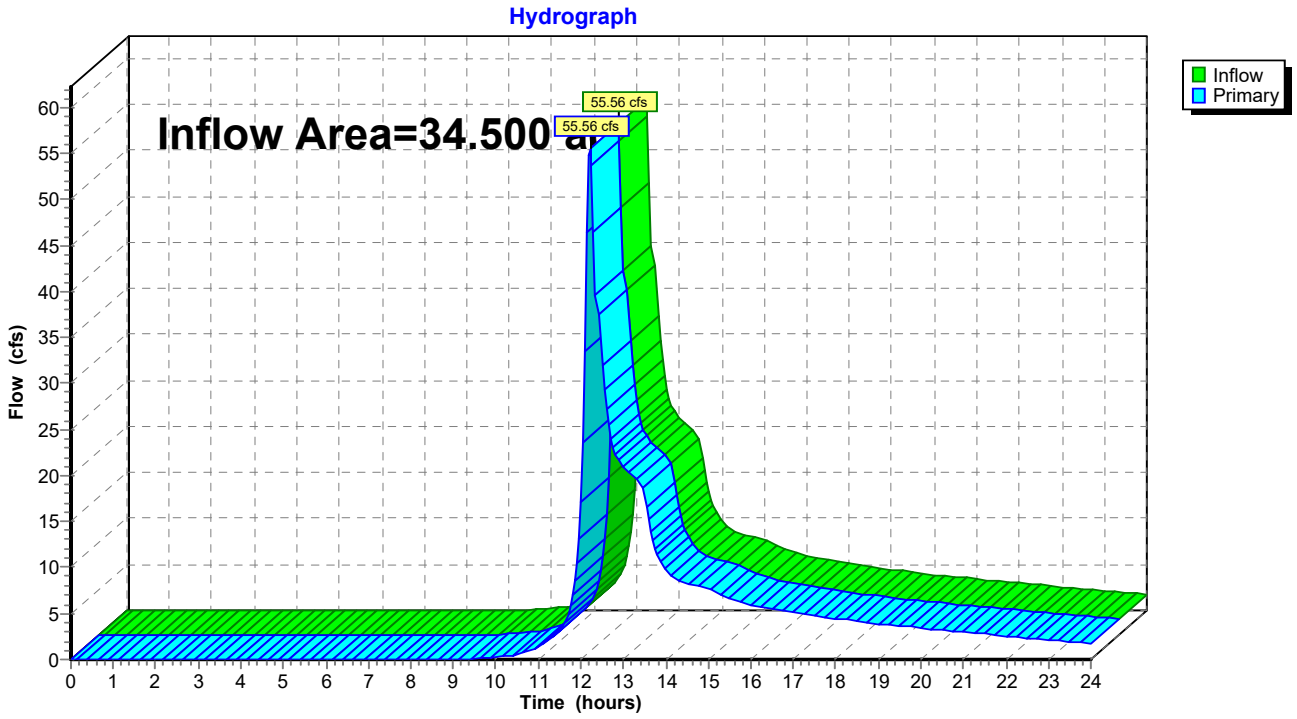


Summary for Link 4L: Southeast Subwatershed

Inflow Area = 34.500 ac, 21.86% Impervious, Inflow Depth > 2.79" for 100 yr event
Inflow = 55.56 cfs @ 12.22 hrs, Volume= 8.034 af
Primary = 55.56 cfs @ 12.22 hrs, Volume= 8.034 af, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node 99L

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Southeast Subwatershed



Events for Subcatchment 1.1: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	1.72	0.115	0.63
2 yr	2.70	2.28	0.149	0.82
10 yr	3.81	4.61	0.289	1.59
100 yr	**6.18**	**10.36**	**0.642**	**3.53**

Events for Subcatchment 1.2: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	11.78	0.789	0.92
2 yr	2.70	14.73	0.978	1.15
10 yr	3.81	26.41	1.740	2.04
100 yr	**6.18**	**52.99**	**3.541**	**4.15**

Events for Subcatchment 2: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	3.78	0.192	1.23
2 yr	2.70	4.54	0.232	1.48
10 yr	3.81	7.45	0.386	2.46
100 yr	**6.18**	**13.75**	**0.734**	**4.69**

Events for Subcatchment 3: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	15.18	0.959	1.04
2 yr	2.70	18.67	1.176	1.27
10 yr	3.81	32.49	2.036	2.20
100 yr	**6.18**	**63.08**	**4.031**	**4.36**

Events for Subcatchment 4: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	3.62	0.242	0.59
2 yr	2.70	4.87	0.315	0.77
10 yr	3.81	10.20	0.624	1.52
100 yr	**6.18**	**23.21**	**1.405**	**3.43**

Events for Subcatchment 5: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	1.38	0.120	0.59
2 yr	2.70	1.86	0.156	0.77
10 yr	3.81	3.90	0.308	1.52
100 yr	**6.18**	**8.98**	**0.695**	**3.43**

Events for Subcatchment 6: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	7.86	0.640	0.87
2 yr	2.70	9.92	0.798	1.09
10 yr	3.81	18.22	1.440	1.96
100 yr	**6.18**	**37.47**	**2.971**	**4.04**

Events for Subcatchment 7.1: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	3.15	0.259	0.63
2 yr	2.70	4.21	0.334	0.82
10 yr	3.81	8.58	0.651	1.59
100 yr	**6.18**	**19.26**	**1.445**	**3.53**

Events for Subcatchment 7.2: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	6.35	0.483	0.87
2 yr	2.70	8.01	0.603	1.09
10 yr	3.81	14.68	1.088	1.96
100 yr	**6.18**	**30.05**	**2.244**	**4.04**

Events for Subcatchment 8: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	4.07	0.269	0.63
2 yr	2.70	5.40	0.347	0.82
10 yr	3.81	11.03	0.676	1.59
100 yr	**6.18**	**24.60**	**1.499**	**3.53**

Events for Subcatchment 9: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	11.90	0.877	0.98
2 yr	2.70	14.77	1.082	1.21
10 yr	3.81	26.08	1.899	2.12
100 yr	**6.18**	**51.61**	**3.811**	**4.25**

Events for Subcatchment 10: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	1.30	0.092	0.63
2 yr	2.70	1.72	0.119	0.82
10 yr	3.81	3.49	0.232	1.59
100 yr	**6.18**	**7.81**	**0.515**	**3.53**

Events for Subcatchment 11: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	9.92	0.643	1.04
2 yr	2.70	12.21	0.789	1.27
10 yr	3.81	21.13	1.366	2.20
100 yr	**6.18**	**41.03**	**2.704**	**4.36**

Events for Subcatchment 12: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	7.18	0.476	0.82
2 yr	2.70	9.13	0.597	1.03
10 yr	3.81	16.98	1.094	1.88
100 yr	**6.18**	**35.22**	**2.289**	**3.94**

Events for Subcatchment 13: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	4.94	0.285	0.87
2 yr	2.70	6.22	0.356	1.09
10 yr	3.81	11.31	0.642	1.96
100 yr	**6.18**	**22.95**	**1.325**	**4.05**

Events for Subcatchment 14: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	1.22	0.086	0.59
2 yr	2.70	1.64	0.112	0.77
10 yr	3.81	3.41	0.221	1.52
100 yr	**6.18**	**7.76**	**0.498**	**3.43**

Events for Subcatchment 15: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	3.87	0.229	0.68
2 yr	2.70	5.07	0.294	0.87
10 yr	3.81	9.98	0.563	1.66
100 yr	**6.18**	**21.73**	**1.230**	**3.63**

Events for Subcatchment 16: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	8.52	0.576	0.59
2 yr	2.70	11.45	0.749	0.77
10 yr	3.81	23.96	1.483	1.52
100 yr	**6.18**	**54.55**	**3.342**	**3.43**

Events for Subcatchment 17: Subarea

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1 yr	2.40	2.96	0.168	0.68
2 yr	2.70	3.87	0.215	0.87
10 yr	3.81	7.66	0.412	1.66
100 yr	**6.18**	**16.70**	**0.900**	**3.63**

Events for Pond 1P&B: Basin 1.1B, Pond 1.2P, & Basin 1.2B combined

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	13.49	0.75	0.08	0.67	935.45	0.562
2 yr	16.99	0.89	0.09	0.80	935.66	0.716
10 yr	30.98	1.28	0.12	1.17	936.48	1.380
100 yr	**63.16**	**4.16**	**0.17**	**3.99**	**937.78**	**2.772**

Events for Pond 2B: Basin

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	3.78	3.63	0.06	3.56	933.68	0.024
2 yr	4.56	4.40	0.06	4.33	933.71	0.025
10 yr	7.91	7.67	0.07	7.60	933.83	0.029
100 yr	**14.73**	**14.43**	**0.08**	**14.36**	**934.01**	**0.036**

Events for Pond 3P: Pond

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	15.18	0.43	929.57	0.696
2 yr	18.67	1.03	929.85	0.789
10 yr	32.49	7.76	930.71	1.095
100 yr	**63.20**	**30.26**	**932.00**	**1.614**

Events for Pond 4B: Basin

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	3.62	0.95	0.95	0.00	936.29	0.067
2 yr	4.87	1.03	1.03	0.00	936.44	0.102
10 yr	10.20	1.39	1.38	0.00	937.04	0.267
100 yr	**23.21**	**4.45**	**2.23**	**2.22**	**938.15**	**0.653**

Events for Pond 5RG: Rain Garden

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	1.38	0.08	0.01	0.07	926.21	0.081
2 yr	1.86	0.13	0.01	0.12	926.37	0.097
10 yr	3.90	0.25	0.01	0.24	927.14	0.195
100 yr	**8.98**	**0.92**	**0.02**	**0.90**	**928.57**	**0.458**

Events for Pond 6P: Pond

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	7.86	0.35	916.27	0.443
2 yr	9.92	0.39	916.81	0.586
10 yr	18.26	2.31	917.77	0.890
100 yr	**37.72**	**11.95**	**918.93**	**1.431**

Events for Pond 7RG&P: Rain Garden 7RG & Pond 7P combined

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	9.49	0.39	0.01	0.38	921.77	0.500
2 yr	12.20	0.44	0.01	0.42	921.98	0.652
10 yr	23.25	0.58	0.02	0.56	922.73	1.307
100 yr	**49.28**	**3.25**	**0.04**	**3.21**	**923.77**	**2.507**

Events for Pond 8B: Basin

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	4.07	0.11	0.01	0.09	916.03	0.198
2 yr	5.40	0.15	0.01	0.14	916.23	0.246
10 yr	11.03	0.28	0.01	0.26	917.13	0.490
100 yr	**24.60**	**2.30**	**0.02**	**2.28**	**918.66**	**0.985**

Events for Pond 9P: Pond

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	11.90	0.28	899.58	0.708
2 yr	14.77	0.32	899.99	0.915
10 yr	26.21	0.43	901.49	1.735
100 yr	**51.91**	**6.65**	**902.97**	**2.660**

Events for Pond 10B: Basin

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	1.30	0.08	0.08	0.00	911.09	0.051
2 yr	1.72	0.09	0.09	0.00	911.24	0.071
10 yr	3.49	0.10	0.10	0.00	911.85	0.160
100 yr	**7.81**	**0.35**	**0.14**	**0.21**	**912.93**	**0.345**

Events for Pond 11P: Pond

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	9.92	0.29	914.16	0.458
2 yr	12.21	0.32	914.51	0.574
10 yr	21.13	1.29	915.45	0.929
100 yr	**41.03**	**14.60**	**916.48**	**1.393**

Events for Pond 12P: Pond

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	7.18	0.61	923.71	0.281
2 yr	9.13	1.13	923.92	0.323
10 yr	16.98	7.48	924.53	0.459
100 yr	**35.22**	**14.73**	**925.90**	**0.844**

Events for Pond 13P: Pond

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1 yr	4.94	0.32	896.06	0.165
2 yr	6.22	0.38	896.26	0.213
10 yr	11.31	0.53	897.04	0.416
100 yr	**22.95**	**7.42**	**897.76**	**0.633**

Events for Link 1L: West Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1 yr	3.16	3.16	**0.00**
2 yr	4.10	4.10	0.00
10 yr	9.12	9.12	0.00
100 yr	**42.78**	**42.78**	0.00

Events for Link 2L: Northwest Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1 yr	1.43	1.43	**0.00**
2 yr	1.90	1.90	0.00
10 yr	3.80	3.80	0.00
100 yr	**13.66**	**13.66**	0.00

Events for Link 3L: North Subwatershed (drainage swale)

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1 yr	7.79	7.79	**0.00**
2 yr	9.84	9.84	0.00
10 yr	18.23	18.23	0.00
100 yr	**48.92**	**48.92**	0.00

Events for Link 4L: Southeast Subwatershed

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
1 yr	8.79	8.79	**0.00**
2 yr	11.79	11.79	0.00
10 yr	24.52	24.52	0.00
100 yr	**55.56**	**55.56**	0.00

APPENDIX C

Treatment Analysis

Treatment Analysis Results

FOR: Welshire Farm

LOCATION: Town of Delafield, Wisconsin

Land Use	Total Loading (lbs)	BMP Type	BMP		Total Solids Yield (lbs)	% TSS Removed
			lbs IN	lbs OUT		
Subarea 1.1	186	Bioretention Basin 1B and Disconnected roof/patios	186	0	drains to 1.2P	100.0%
Subarea 1.2a	1917	Pond 1.2P	1917	623	drains to 1.2B	
Subarea 1.2b	425	Basin 1.2B	1049	427	drains to 2B	
Subarea 2	753	Infiltration Basin 2B Disconnected roof/patios	1180	934	934	20.8%
Subarea 3	3487	Pond 3P	3487	521	521	85.1%
Subarea 4	375	Infiltration Basin 4B and Disconnected roof/patios	375	0	0	100.0%
Subarea 5	187	Rain Garden 5B and Disconnected roof/patios	187	14	drains to 6P	92.2%
Subarea 6	2586	Pond 6P and Disconnected roof/patios	2600	475	475	81.7%
Subarea 7a	392	Rain Garden 7B and Disconnected roof/patios	392	96	drains to 7P	75.5%
Subarea 7b	1310	Pond 7P and Disconnected roof/patios	1406	128	128	90.9%
Subarea 8	482	Infiltration Basin 8B and Disconnected roof/patios	482	54	drains to 9P	88.7%
Subarea 9	2991	Pond 9P and Disconnected roof/patios	3046	235	235	92.3%
Subarea 10	168	Infiltration Basin 10B and Disconnected roof/patios	168	0	0	100.0%
Subarea 11	2361	Pond 11P	2361	305	305	87.1%
Subarea 12	1267	Infiltration Basin 12B and Disconnected roof/patios	1267	201	201	84.2%
Subarea 13	899	Infiltration Basin 13B and Disconnected roof/patios	899	110	110	87.8%
Subarea 14	189	Disconnection of roof/patios	189	164	164	13.2%
Subarea 15	420	Disconnection of roof/patios	420	246	246	41.5%
Subarea 16	694	Disconnection of roof/patios	694	575	575	17.2%
Subarea 17	275	Disconnection of roof/patios	275	157	157	43.1%
Total	***21366***	**--**	**--**	**--**	***4050***	***81.0%***

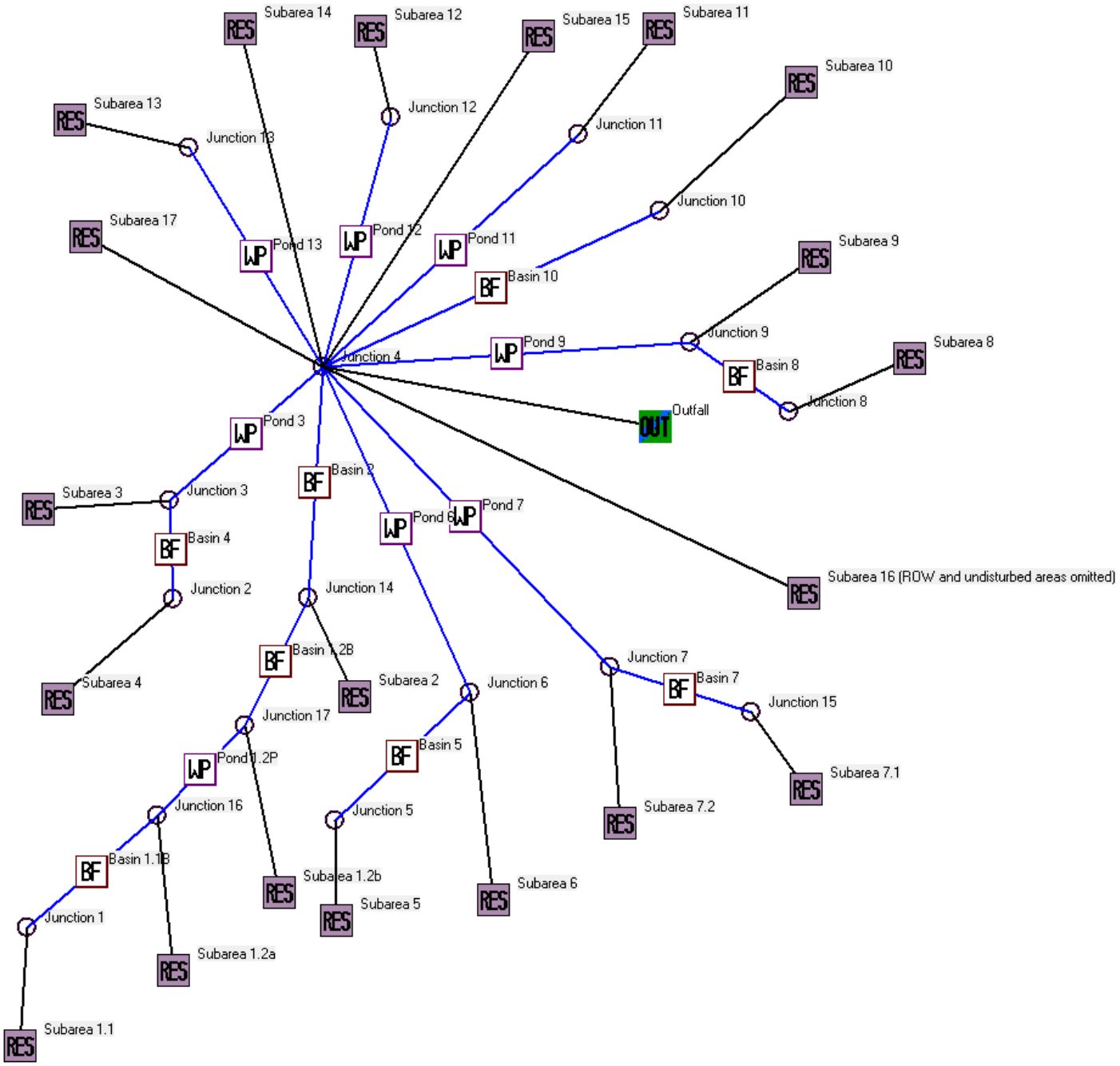
Connected Model Total lbs without Controls = **21366** **lbs (from WinSLAMM output)**

Disconnected Model Total lbs with Controls = **4050** **lbs (from WinSLAMM output)**

Total lbs Removed = **21366 - 4050 =** **17317** **lbs**

% TSS Removed = **100 x (17317 / 21366) =** **81.0** **%**

Treatment Analysis - Connected Model



SLAMM for Windows Version 10.5.0

Data file name: C:\Data\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Treatment_Connected.mdb
Data file description:
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Start of Winter Season: 12/06 End of Winter Season: 03/28
Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69
Date of run: 04-04-2024 Time of run: 10:53:57
Total Area Modeled (acres): 105.500
Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	3.296E+06	-	103.8	21366	-
Outfall Total with Controls:	2.787E+06	15.44%	28.84	5017	76.52%
Annualized Total After Outfall Controls:	2.826E+06			5087	

```
Data file name:  C:\Data\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Treatment_Connected.mdb
WinSLAMM Version 10.5.0
Rain file name:  C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name:  C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name:  C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name:  C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name:  C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name:  C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name:  C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name:  C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name:  C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance:  False
Pollutant Relative Concentration file name:  C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File:  C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator:  -42
Study period starting date:  01/05/69       Study period ending date:  12/31/69
Start of Winter Season:  12/06              End of Winter Season:  03/28
Date:  04-04-2024                           Time:  10:54:07
Site information:

LU# 1 - Residential:  Subarea 1.2a     Total area (ac):  5.520
     1 - Roofs 1:  0.910 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1:  0.080 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.530 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.270 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.840 ac.    Smooth    Street Length = 0.239 mi    Street Width = 28.99582 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.370 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.410 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.110 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 2 - Residential:  Subarea 2     Total area (ac):  1.880
     1 - Roofs 1:  0.190 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.180 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.310 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.030 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.030 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.320 ac.    Smooth    Street Length = 0.091 mi    Street Width = 29.01099 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.640 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.180 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 3 - Residential:  Subarea 3     Total area (ac):  11.090
     1 - Roofs 1:  0.920 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.910 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  1.020 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.180 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.170 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.550 ac.    Smooth    Street Length = 0.4409 mi    Street Width = 29.00317 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  4.600 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
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     57 - Undeveloped Areas 1:  1.520 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.220 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 4 - Residential:  Subarea 4     Total area (ac):  4.910
     1 - Roofs 1:  0.500 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.080 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.040 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.290 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 5 - Residential:  Subarea 5     Total area (ac):  2.430
     1 - Roofs 1:  0.250 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.040 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.010 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.130 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 6 - Residential:  Subarea 6     Total area (ac):  8.820
     1 - Roofs 1:  0.530 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.180 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1:  0.190 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.330 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.210 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.070 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.480 ac.    Smooth    Street Length = 0.421 mi    Street Width = 29.00237 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  3.040 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.640 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.150 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 7 - Residential:  Subarea 7.2     Total area (ac):  6.660
     1 - Roofs 1:  0.520 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.520 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.310 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.090 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.080 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.410 ac.    Smooth    Street Length = 0.1166 mi    Street Width = 29.00943 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  3.070 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.450 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.210 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 8 - Residential:  Subarea 8     Total area (ac):  5.090
     1 - Roofs 1:  0.500 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.270 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.430 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.890 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 9 - Residential:  Subarea 9     Total area (ac):  10.750
     1 - Roofs 1:  0.620 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.620 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.660 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.130 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.130 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.420 ac.    Smooth    Street Length = 0.404 mi    Street Width = 28.99752 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  5.320 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.440 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.410 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
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LU# 10 - Residential:  Subarea 10     Total area (ac):  1.750
     1 - Roofs 1:  0.190 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.050 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.970 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.540 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 11 - Residential:  Subarea 11     Total area (ac):  7.440
     1 - Roofs 1:  0.790 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.260 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.620 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.150 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.050 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.100 ac.    Smooth    Street Length = 0.3129 mi    Street Width = 29.00288 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  3.640 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.600 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.230 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 12 - Residential:  Subarea 12     Total area (ac):  6.970
     1 - Roofs 1:  0.450 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.450 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.290 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.160 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.160 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.390 ac.    Smooth    Street Length = 0.1109 mi    Street Width = 29.01262 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.750 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.190 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.130 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 13 - Residential:  Subarea 13     Total area (ac):  3.930
     1 - Roofs 1:  0.200 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.200 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.170 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.040 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.030 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.370 ac.    Smooth    Street Length = 0.1053 mi    Street Width = 28.9886 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.350 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.370 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.200 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 14 - Residential:  Subarea 14     Total area (ac):  1.740
     1 - Roofs 1:  0.090 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.020 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.020 ac.    Smooth    Street Length = 0.0057 mi    Street Width = 28.94737 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.290 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.320 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 15 - Residential:  Subarea 15     Total area (ac):  4.060
     1 - Roofs 1:  0.500 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.220 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.060 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.280 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 16 - Residential:  Subarea 16 (ROW and undisturbed areas omitted)     Total area (ac):  7.680
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     1 - Roofs 1:  0.420 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.060 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.100 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.240 ac.    Smooth    Street Length = 0.0683 mi    Street Width = 28.98975 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.070 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  4.790 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 17 - Residential:  Subarea 17     Total area (ac):  2.970
     1 - Roofs 1:  0.450 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.080 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.030 ac.    Smooth    Street Length = 0.0085 mi    Street Width = 29.11765 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.960 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.450 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 18 - Residential:  Subarea 7.1     Total area (ac):  4.910
     1 - Roofs 1:  0.400 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.270 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.750 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.490 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 19 - Residential:  Subarea 1.1     Total area (ac):  2.180
     1 - Roofs 1:  0.260 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.070 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.900 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.950 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 20 - Residential:  Subarea 1.2b     Total area (ac):  4.720
     1 - Roofs 1:  0.640 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.230 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.720 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.130 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

      Control Practice 1:  Wet Detention Pond CP# 1 (DS) - Pond 3
         Particle Size Distribution file name:  Not needed - calculated by program
         Initial stage elevation (ft):   5
         Peak to Average Flow Ratio:   3.8
         Maximum flow allowed into pond (cfs):  No maximum value entered
         Outlet Characteristics:
              Outlet type:  Sharp Crested Weir
                    1.  Sharp crested weir length (ft):   1
                    2.  Sharp crested weir height from invert:   3.5
                    3.  Sharp crested weir invert elevation above datum (ft):   7.5
              Outlet type:  Orifice 1
                    1.  Orifice diameter (ft):   0.25
                    2.  Number of orifices:   1
                    3.  Invert elevation above datum (ft):   5
              Outlet type:  Broad Crested Weir
                    1.  Weir crest length (ft):   10
                    2.  Weir crest width (ft):   10
                    3.  Height from datum to bottom of weir opening:   10
              Outlet type:  Vertical Stand Pipe
                    1.  Stand pipe diameter (ft):   4
                    2.  Stand pipe height above datum (ft):   8.5
```

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0800	0.00	0.00
2	4.00	0.1300	0.00	0.00
3	5.00	0.2200	0.00	0.00
4	6.00	0.2600	0.00	0.00
5	7.00	0.3000	0.00	0.00
6	8.00	0.3400	0.00	0.00
7	9.00	0.3900	0.00	0.00
8	10.00	0.4300	0.00	0.00
9	11.00	0.4800	0.00	0.00

Control Practice 2: Biofilter CP# 1 (DS) - Basin 4

1. Top area (square feet) = 29403
2. Bottom aea (square feet) = 9668
3. Depth (ft): 4
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 3.6
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data — Soil Type Fraction in Eng. Soil

User-Defined Media Type 1.000

Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 0

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 3

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 2

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.33
2. Pipe invert elevation above datum (ft): 1
3. Number of surface pipe outlets: 1

```
Control Practice 3:  Biofilter CP# 2 (DS) - Basin 5
   1.  Top area (square feet) =  14340
   2.  Bottom aea (square feet) =  3116
   3.  Depth (ft):   5.5
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.07
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   0.07
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Media Type                 1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   0.07
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   10
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   4.5
       Outlet type:  Vertical Stand Pipe
              1.  Stand pipe diameter (ft):   3
              2.  Stand pipe height above datum (ft):   4
       Outlet type:  Surface Discharge Pipe
              1.  Surface discharge pipe outlet diameter (ft):   0.25
              2.  Pipe invert elevation above datum (ft):   1.5
              3.  Number of surface pipe outlets:   1

Control Practice 4:  Wet Detention Pond CP# 2 (DS) - Pond 6
   Particle Size Distribution file name:  Not needed - calculated by program
   Initial stage elevation (ft):   5
   Peak to Average Flow Ratio:   3.8
   Maximum flow allowed into pond (cfs):  No maximum value entered
   Outlet Characteristics:
        Outlet type:  Sharp Crested Weir
              1.  Sharp crested weir length (ft):   1
              2.  Sharp crested weir height from invert:   3
              3.  Sharp crested weir invert elevation above datum (ft):   8
        Outlet type:  Orifice 1
              1.  Orifice diameter (ft):   0.25
```

2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 10

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 9

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0200	0.00	0.00
2	4.00	0.0800	0.00	0.00
3	5.00	0.1500	0.00	0.00
4	6.00	0.1900	0.00	0.00
5	7.00	0.2300	0.00	0.00
6	8.00	0.2900	0.00	0.00
7	9.00	0.3900	0.00	0.00
8	10.00	0.6100	0.00	0.00
9	11.00	0.8800	0.00	0.00

Control Practice 5: Wet Detention Pond CP# 3 (DS) - Pond 7

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 5

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Sharp Crested Weir
1. Sharp crested weir length (ft): 1
2. Sharp crested weir height from invert: 1.2
3. Sharp crested weir invert elevation above datum (ft): 7

Outlet type: Orifice 1
1. Orifice diameter (ft): 0.33
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 8

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 8

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0500	0.00	0.00
2	4.00	0.1100	0.00	0.00
3	5.00	0.2100	0.00	0.00

4	5.20	0.4600	0.00	0.00
5	6.20	0.6600	0.00	0.00
6	7.20	0.8500	0.00	0.00
7	8.20	1.1600	0.00	0.00

Control Practice 6: Biofilter CP# 3 (DS) - Basin 8
1. Top area (square feet) = 21754
2. Bottom aea (square feet) = 9881
3. Depth (ft): 6.3
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.04
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0.04
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0
Soil Data Soil Type Fraction in Eng. Soil
User-Defined Media Type 1.000
Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 0.04
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 5.3
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 4
Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.25
2. Pipe invert elevation above datum (ft): 1.25
3. Number of surface pipe outlets: 1

Control Practice 7: Wet Detention Pond CP# 4 (DS) - Pond 9
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Orifice 1
1. Orifice diameter (ft): 0.25

2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 10

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 9.75

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.1500	0.00	0.00
2	4.00	0.3500	0.00	0.00
3	5.00	0.4100	0.00	0.00
4	6.00	0.4600	0.00	0.00
5	7.00	0.5100	0.00	0.00
6	8.00	0.5600	0.00	0.00
7	9.00	0.6100	0.00	0.00
8	10.00	0.6700	0.00	0.00
9	11.00	0.8000	0.00	0.00

Control Practice 8: Biofilter CP# 4 (DS) - Basin 10
1. Top area (square feet) = 13995
2. Bottom aea (square feet) = 5480
3. Depth (ft): 6
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0.5
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data	Soil Type Fraction in Eng. Soil
User-Defined Media Type	1.000

Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 0.5
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10

2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 5

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 3

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.25
2. Pipe invert elevation above datum (ft): 2
3. Number of surface pipe outlets: 1

Control Practice 9: Wet Detention Pond CP# 5 (DS) - Pond 11
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:

Outlet type: Sharp Crested Weir
1. Sharp crested weir length (ft): 1
2. Sharp crested weir height from invert: 2.5
3. Sharp crested weir invert elevation above datum (ft): 7.5

Outlet type: Orifice 1
1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 10

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 8.5

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0700	0.00	0.00
2	4.00	0.1400	0.00	0.00
3	5.00	0.2300	0.00	0.00
4	5.50	0.2600	0.00	0.00
5	6.50	0.3100	0.00	0.00
6	7.50	0.3800	0.00	0.00
7	8.50	0.4500	0.00	0.00
8	9.50	0.5400	0.00	0.00
9	10.00	0.5800	0.00	0.00

Control Practice 10: Wet Detention Pond CP# 6 (DS) - Pond 12
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:

Outlet type: Sharp Crested Weir
1. Sharp crested weir length (ft):   1
2. Sharp crested weir height from invert: 3.5
3. Sharp crested weir invert elevation above datum (ft):   6.5
Outlet type: Orifice 1
1. Orifice diameter (ft):   0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft):   5
Outlet type: Broad Crested Weir
1. Weir crest length (ft):   10
2. Weir crest width (ft):   10
3. Height from datum to bottom of weir opening: 9
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft):   3
2. Stand pipe height above datum (ft):   7.25

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	0.0300	0.00	0.00
2	4.00	0.0600	0.00	0.00
3	5.00	0.1300	0.00	0.00
4	6.00	0.1700	0.00	0.00
5	7.00	0.2100	0.00	0.00
6	8.00	0.2700	0.00	0.00
7	9.00	0.3300	0.00	0.00
8	10.00	0.4200	0.00	0.00

Control Practice 11: Wet Detention Pond CP# 7 (DS) - Pond 13
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft):   5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Orifice 1
1. Orifice diameter (ft):   0.33
2. Number of orifices: 1
3. Invert elevation above datum (ft):   5
Outlet type: Broad Crested Weir
1. Weir crest length (ft):   10
2. Weir crest width (ft):   10
3. Height from datum to bottom of weir opening: 7.5
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft):   3
2. Stand pipe height above datum (ft):   7
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0300	0.00	0.00
2	4.00	0.1000	0.00	0.00

3	5.00	0.2000	0.00	0.00
4	5.70	0.2300	0.00	0.00
5	6.70	0.2800	0.00	0.00
6	7.70	0.3300	0.00	0.00
7	8.50	0.3700	0.00	0.00

Control Practice 12: Biofilter CP# 5 (DS) - Basin 1.1B
1. Top area (square feet) = 30877
2. Bottom aea (square feet) = 6930
3. Depth (ft): 5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.11
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Media Type 1.000
Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 3.6
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 4
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 3.5
Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 1.5
3. Number of surface pipe outlets: 1

Control Practice 13: Biofilter CP# 6 (DS) - Basin 2
1. Top area (square feet) = 2688
2. Bottom aea (square feet) = 1074
3. Depth (ft): 4
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 1.63
6. Random infiltration rate generation? No

```
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Media Type                 1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   3.6
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   10
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   1.5
       Outlet type:  Surface Discharge Pipe
              1.  Surface discharge pipe outlet diameter (ft):   1
              2.  Pipe invert elevation above datum (ft):   1
              3.  Number of surface pipe outlets:   1

Control Practice 14:  Biofilter CP# 7 (DS) - Basin 7
   1.  Top area (square feet) =  13868
   2.  Bottom aea (square feet) =  3858
   3.  Depth (ft):   3.2
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.11
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   1
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   0.11
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Media Type                 1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
```

```
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   0.11
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   8
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   1.2

Control Practice 15:  Biofilter CP# 8 (DS) - Basin 1.2B
   1.  Top area (square feet) =  76565
   2.  Bottom aea (square feet) =  13403
   3.  Depth (ft):   5.8
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.11
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Media Type                 1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   3.6
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   10
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   4.8
       Outlet type:  Vertical Stand Pipe
              1.  Stand pipe diameter (ft):   3
              2.  Stand pipe height above datum (ft):   3.55
       Outlet type:  Surface Discharge Pipe
              1.  Surface discharge pipe outlet diameter (ft):   0.5
              2.  Pipe invert elevation above datum (ft):   1
              3.  Number of surface pipe outlets:   1

Control Practice 16:  Wet Detention Pond CP# 8 (DS) - Pond 1.2P
   Particle Size Distribution file name:  Not needed - calculated by program
   Initial stage elevation (ft):   5
   Peak to Average Flow Ratio:   3.8
   Maximum flow allowed into pond (cfs):  No maximum value entered
```

Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.5
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

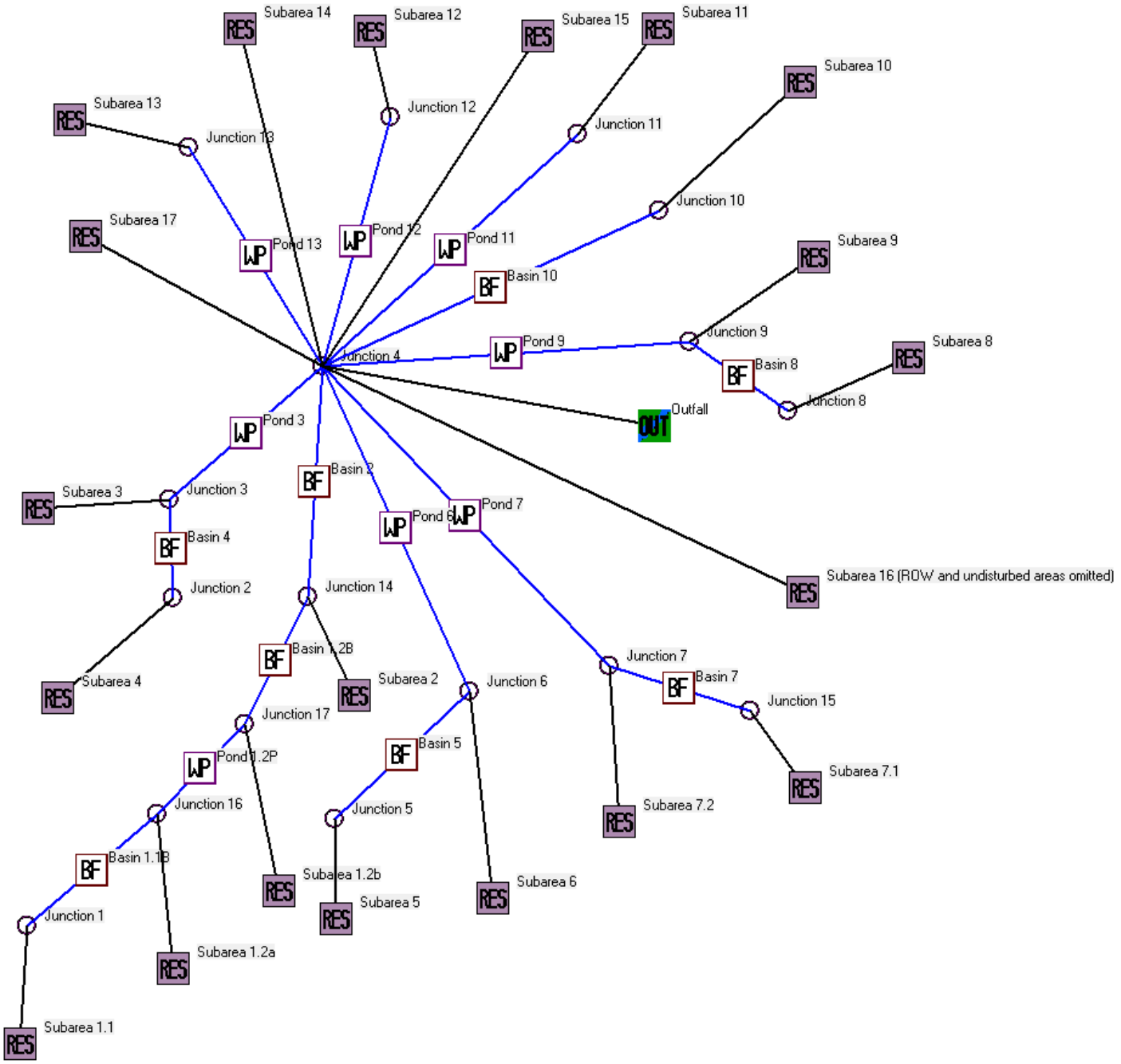
Outlet type: Broad Crested Weir

1. Weir crest length (ft): 80
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 7

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0300	0.00	0.00
2	4.00	0.0600	0.00	0.00
3	5.00	0.1100	0.00	0.00
4	5.30	0.1100	0.00	0.00
5	6.30	0.1400	0.00	0.00
6	7.30	0.1700	0.00	0.00
7	8.30	0.1900	0.00	0.00
8	9.30	0.2200	0.00	0.00
9	10.30	0.2600	0.00	0.00

Treatment Analysis - Disconnected Model



SLAMM for Windows Version 10.5.0

Data file name: C:\Data\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Treatment_Disconnected.mdb
Data file description:
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Start of Winter Season: 12/06 End of Winter Season: 03/28
Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69
Date of run: 04-04-2024 Time of run: 10:46:18
Total Area Modeled (acres): 105.500
Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	2.475E+06	-	123.7	19117	-
Outfall Total with Controls:	2.155E+06	12.93%	30.10	4050	78.81%
Annualized Total After Outfall Controls:	2.185E+06			4106	

Data file name: C:\Data\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Treatment_Disconnected.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/05/69   Study period ending date: 12/31/69
Start of Winter Season: 12/06   End of Winter Season: 03/28
Date: 04-04-2024   Time: 10:46:26
Site information:

LU# 1 - Residential: Subarea 1.2a   Total area (ac): 5.520
     1 - Roofs 1: 0.910 ac.   Pitched   Connected   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1: 0.080 ac.   Connected   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1: 0.530 ac.   Connected   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1: 0.270 ac.   Connected   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1: 0.840 ac.   Smooth   Street Length = 0.239 mi   Street Width = 28.99582 ft   Street Edges = 2
            Default St. Dirt Accum.   Annual Winter Load = 2500 lbs   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1: 2.370 ac.   Normal Clayey   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1: 0.410 ac.   Normal Clayey   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas: 0.110 ac.   Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 2 - Residential: Subarea 2   Total area (ac): 1.880
     1 - Roofs 1: 0.190 ac.   Pitched   Connected   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2: 0.180 ac.   Pitched   Disconnected   Normal Clayey   Low Density   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1: 0.310 ac.   Connected   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1: 0.030 ac.   Connected   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2: 0.030 ac.   Disconnected   Normal Clayey   Low Density   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1: 0.320 ac.   Smooth   Street Length = 0.091 mi   Street Width = 29.01099 ft   Street Edges = 2
            Default St. Dirt Accum.   Annual Winter Load = 2500 lbs   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1: 0.640 ac.   Normal Clayey   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1: 0.180 ac.   Normal Clayey   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 3 - Residential: Subarea 3   Total area (ac): 11.090
     1 - Roofs 1: 0.920 ac.   Pitched   Connected   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2: 0.910 ac.   Pitched   Disconnected   Normal Clayey   Low Density   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1: 1.020 ac.   Connected   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1: 0.180 ac.   Connected   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2: 0.170 ac.   Disconnected   Normal Clayey   Low Density   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1: 1.550 ac.   Smooth   Street Length = 0.4409 mi   Street Width = 29.00317 ft   Street Edges = 2
            Default St. Dirt Accum.   Annual Winter Load = 2500 lbs   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1: 4.600 ac.   Normal Clayey   Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

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     57 - Undeveloped Areas 1:  1.520 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.220 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 4 - Residential:  Subarea 4     Total area (ac):  4.910
     1 - Roofs 1:  0.500 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.080 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.040 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.290 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 5 - Residential:  Subarea 5     Total area (ac):  2.430
     1 - Roofs 1:  0.250 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.040 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.010 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.130 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 6 - Residential:  Subarea 6     Total area (ac):  8.820
     1 - Roofs 1:  0.530 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.180 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1:  0.190 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.330 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.210 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.070 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.480 ac.    Smooth    Street Length = 0.421 mi    Street Width = 29.00237 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  3.040 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.640 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.150 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 7 - Residential:  Subarea 7.2     Total area (ac):  6.660
     1 - Roofs 1:  0.520 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.520 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.310 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.090 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.080 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.410 ac.    Smooth    Street Length = 0.1166 mi    Street Width = 29.00943 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  3.070 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.450 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.210 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 8 - Residential:  Subarea 8     Total area (ac):  5.090
     1 - Roofs 1:  0.500 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.270 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.430 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.890 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 9 - Residential:  Subarea 9     Total area (ac):  10.750
     1 - Roofs 1:  0.620 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.620 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.660 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.130 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.130 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.420 ac.    Smooth    Street Length = 0.404 mi    Street Width = 28.99752 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  5.320 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.440 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.410 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
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LU# 10 - Residential:  Subarea 10     Total area (ac):  1.750
     1 - Roofs 1:  0.190 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.050 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.970 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.540 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 11 - Residential:  Subarea 11     Total area (ac):  7.440
     1 - Roofs 1:  0.790 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.260 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.620 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.150 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.050 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.100 ac.    Smooth    Street Length = 0.3129 mi    Street Width = 29.00288 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  3.640 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.600 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.230 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 12 - Residential:  Subarea 12     Total area (ac):  6.970
     1 - Roofs 1:  0.450 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.450 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.290 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.160 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.160 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.390 ac.    Smooth    Street Length = 0.1109 mi    Street Width = 29.01262 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.750 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.190 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.130 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 13 - Residential:  Subarea 13     Total area (ac):  3.930
     1 - Roofs 1:  0.200 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.200 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.170 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.040 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.030 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.370 ac.    Smooth    Street Length = 0.1053 mi    Street Width = 28.9886 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.350 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.370 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.200 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 14 - Residential:  Subarea 14     Total area (ac):  1.740
     1 - Roofs 1:  0.090 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.020 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.020 ac.    Smooth    Street Length = 0.0057 mi    Street Width = 28.94737 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.290 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.320 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 15 - Residential:  Subarea 15     Total area (ac):  4.060
     1 - Roofs 1:  0.500 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.220 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.060 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.280 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 16 - Residential:  Subarea 16     Total area (ac):  7.680
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     1 - Roofs 1:  0.420 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.060 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.100 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.240 ac.    Smooth    Street Length = 0.0683 mi    Street Width = 28.98975 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.070 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  4.790 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 17 - Residential:  Subarea 17     Total area (ac):  2.970
     1 - Roofs 1:  0.450 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.080 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.030 ac.    Smooth    Street Length = 0.0085 mi    Street Width = 29.11765 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.960 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.450 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 18 - Residential:  Subarea 7.1     Total area (ac):  4.910
     1 - Roofs 1:  0.400 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.270 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.750 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.490 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 19 - Residential:  Subarea 1.1     Total area (ac):  2.180
     1 - Roofs 1:  0.260 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.070 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.900 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.950 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 20 - Residential:  Subarea 1.2b     Total area (ac):  4.720
     1 - Roofs 1:  0.640 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.230 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.720 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.130 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

      Control Practice 1:  Wet Detention Pond CP# 1 (DS) - Pond 3
         Particle Size Distribution file name:  Not needed - calculated by program
         Initial stage elevation (ft):   5
         Peak to Average Flow Ratio:   3.8
         Maximum flow allowed into pond (cfs):  No maximum value entered
         Outlet Characteristics:
              Outlet type:  Sharp Crested Weir
                    1.  Sharp crested weir length (ft):   1
                    2.  Sharp crested weir height from invert:   3.5
                    3.  Sharp crested weir invert elevation above datum (ft):   7.5
              Outlet type:  Orifice 1
                    1.  Orifice diameter (ft):   0.25
                    2.  Number of orifices:   1
                    3.  Invert elevation above datum (ft):   5
              Outlet type:  Broad Crested Weir
                    1.  Weir crest length (ft):   10
                    2.  Weir crest width (ft):   10
                    3.  Height from datum to bottom of weir opening:   10
              Outlet type:  Vertical Stand Pipe
                    1.  Stand pipe diameter (ft):   4
                    2.  Stand pipe height above datum (ft):   8.5
```

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0800	0.00	0.00
2	4.00	0.1300	0.00	0.00
3	5.00	0.2200	0.00	0.00
4	6.00	0.2600	0.00	0.00
5	7.00	0.3000	0.00	0.00
6	8.00	0.3400	0.00	0.00
7	9.00	0.3900	0.00	0.00
8	10.00	0.4300	0.00	0.00
9	11.00	0.4800	0.00	0.00

Control Practice 2: Biofilter CP# 1 (DS) - Basin 4

1. Top area (square feet) = 29403
2. Bottom aea (square feet) = 9668
3. Depth (ft): 4
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 3.6
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data — Soil Type Fraction in Eng. Soil

User-Defined Media Type 1.000

Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 0

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 3

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 2

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.33
2. Pipe invert elevation above datum (ft): 1
3. Number of surface pipe outlets: 1

```
Control Practice 3:  Biofilter CP# 2 (DS) - Basin 5
   1.  Top area (square feet) =  14340
   2.  Bottom aea (square feet) =  3116
   3.  Depth (ft):   5.5
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.07
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   0.07
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Media Type                 1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   0.07
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   10
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   4.5
       Outlet type:  Vertical Stand Pipe
              1.  Stand pipe diameter (ft):   3
              2.  Stand pipe height above datum (ft):   4
       Outlet type:  Surface Discharge Pipe
              1.  Surface discharge pipe outlet diameter (ft):   0.25
              2.  Pipe invert elevation above datum (ft):   1.5
              3.  Number of surface pipe outlets:   1

Control Practice 4:  Wet Detention Pond CP# 2 (DS) - Pond 6
   Particle Size Distribution file name:  Not needed - calculated by program
   Initial stage elevation (ft):   5
   Peak to Average Flow Ratio:   3.8
   Maximum flow allowed into pond (cfs):  No maximum value entered
   Outlet Characteristics:
        Outlet type:  Sharp Crested Weir
              1.  Sharp crested weir length (ft):   1
              2.  Sharp crested weir height from invert:   3
              3.  Sharp crested weir invert elevation above datum (ft):   8
        Outlet type:  Orifice 1
              1.  Orifice diameter (ft):   0.25
```

2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 10

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 9

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0200	0.00	0.00
2	4.00	0.0800	0.00	0.00
3	5.00	0.1500	0.00	0.00
4	6.00	0.1900	0.00	0.00
5	7.00	0.2300	0.00	0.00
6	8.00	0.2900	0.00	0.00
7	9.00	0.3900	0.00	0.00
8	10.00	0.6100	0.00	0.00
9	11.00	0.8800	0.00	0.00

Control Practice 5: Wet Detention Pond CP# 3 (DS) - Pond 7

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 5

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Sharp Crested Weir
1. Sharp crested weir length (ft): 1
2. Sharp crested weir height from invert: 1.2
3. Sharp crested weir invert elevation above datum (ft): 7

Outlet type: Orifice 1
1. Orifice diameter (ft): 0.33
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 8

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 8

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0500	0.00	0.00
2	4.00	0.1100	0.00	0.00
3	5.00	0.2100	0.00	0.00

4	5.20	0.4600	0.00	0.00
5	6.20	0.6600	0.00	0.00
6	7.20	0.8500	0.00	0.00
7	8.20	1.1600	0.00	0.00

Control Practice 6: Biofilter CP# 3 (DS) - Basin 8
1. Top area (square feet) = 21754
2. Bottom aea (square feet) = 9881
3. Depth (ft): 6.3
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.04
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0.04
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0
Soil Data Soil Type Fraction in Eng. Soil
User-Defined Media Type 1.000
Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 0.04
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 5.3
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 4
Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.25
2. Pipe invert elevation above datum (ft): 1.25
3. Number of surface pipe outlets: 1

Control Practice 7: Wet Detention Pond CP# 4 (DS) - Pond 9
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Orifice 1
1. Orifice diameter (ft): 0.25

2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 10

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 9.75

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.1500	0.00	0.00
2	4.00	0.3500	0.00	0.00
3	5.00	0.4100	0.00	0.00
4	6.00	0.4600	0.00	0.00
5	7.00	0.5100	0.00	0.00
6	8.00	0.5600	0.00	0.00
7	9.00	0.6100	0.00	0.00
8	10.00	0.6700	0.00	0.00
9	11.00	0.8000	0.00	0.00

Control Practice 8: Biofilter CP# 4 (DS) - Basin 10
1. Top area (square feet) = 13995
2. Bottom aea (square feet) = 5480
3. Depth (ft): 6
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0.5
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data	Soil Type Fraction in Eng. Soil
User-Defined Media Type	1.000

Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 0.5
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10

2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 5

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 3

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.25
2. Pipe invert elevation above datum (ft): 2
3. Number of surface pipe outlets: 1

Control Practice 9: Wet Detention Pond CP# 5 (DS) - Pond 11
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:

Outlet type: Sharp Crested Weir
1. Sharp crested weir length (ft): 1
2. Sharp crested weir height from invert: 2.5
3. Sharp crested weir invert elevation above datum (ft): 7.5

Outlet type: Orifice 1
1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 10

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 8.5

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0700	0.00	0.00
2	4.00	0.1400	0.00	0.00
3	5.00	0.2300	0.00	0.00
4	5.50	0.2600	0.00	0.00
5	6.50	0.3100	0.00	0.00
6	7.50	0.3800	0.00	0.00
7	8.50	0.4500	0.00	0.00
8	9.50	0.5400	0.00	0.00
9	10.00	0.5800	0.00	0.00

Control Practice 10: Wet Detention Pond CP# 6 (DS) - Pond 12
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:

Outlet type: Sharp Crested Weir
1. Sharp crested weir length (ft):   1
2. Sharp crested weir height from invert: 3.5
3. Sharp crested weir invert elevation above datum (ft):   6.5
Outlet type: Orifice 1
1. Orifice diameter (ft):   0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft):   5
Outlet type: Broad Crested Weir
1. Weir crest length (ft):   10
2. Weir crest width (ft):   10
3. Height from datum to bottom of weir opening: 9
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft):   3
2. Stand pipe height above datum (ft):   7.25

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	0.0300	0.00	0.00
2	4.00	0.0600	0.00	0.00
3	5.00	0.1300	0.00	0.00
4	6.00	0.1700	0.00	0.00
5	7.00	0.2100	0.00	0.00
6	8.00	0.2700	0.00	0.00
7	9.00	0.3300	0.00	0.00
8	10.00	0.4200	0.00	0.00

Control Practice 11: Wet Detention Pond CP# 7 (DS) - Pond 13
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft):   5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Orifice 1
1. Orifice diameter (ft):   0.33
2. Number of orifices: 1
3. Invert elevation above datum (ft):   5
Outlet type: Broad Crested Weir
1. Weir crest length (ft):   10
2. Weir crest width (ft):   10
3. Height from datum to bottom of weir opening: 7.5
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft):   3
2. Stand pipe height above datum (ft):   7
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0300	0.00	0.00
2	4.00	0.1000	0.00	0.00

3	5.00	0.2000	0.00	0.00
4	5.70	0.2300	0.00	0.00
5	6.70	0.2800	0.00	0.00
6	7.70	0.3300	0.00	0.00
7	8.50	0.3700	0.00	0.00

Control Practice 12: Biofilter CP# 5 (DS) - Basin 1.1B
1. Top area (square feet) = 30877
2. Bottom aea (square feet) = 6930
3. Depth (ft): 5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.11
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Media Type 1.000
Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 3.6
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 4
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 3.5
Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 1.5
3. Number of surface pipe outlets: 1

Control Practice 13: Biofilter CP# 6 (DS) - Basin 2
1. Top area (square feet) = 2688
2. Bottom aea (square feet) = 1074
3. Depth (ft): 4
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 1.63
6. Random infiltration rate generation? No

```
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Media Type                 1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   3.6
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   10
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   1.5
       Outlet type:  Surface Discharge Pipe
              1.  Surface discharge pipe outlet diameter (ft):   1
              2.  Pipe invert elevation above datum (ft):   1
              3.  Number of surface pipe outlets:   1

Control Practice 14:  Biofilter CP# 7 (DS) - Basin 7
   1.  Top area (square feet) =  13868
   2.  Bottom aea (square feet) =  3858
   3.  Depth (ft):   3.2
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.11
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   1
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   0.11
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Media Type                 1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
```

```
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   0.11
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   8
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   1.2

Control Practice 15:  Biofilter CP# 8 (DS) - Basin 1.2B
   1.  Top area (square feet) =  76565
   2.  Bottom aea (square feet) =  13403
   3.  Depth (ft):   5.8
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.11
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Media Type                 1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   3.6
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   10
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   4.8
       Outlet type:  Vertical Stand Pipe
              1.  Stand pipe diameter (ft):   3
              2.  Stand pipe height above datum (ft):   3.55
       Outlet type:  Surface Discharge Pipe
              1.  Surface discharge pipe outlet diameter (ft):   0.5
              2.  Pipe invert elevation above datum (ft):   1
              3.  Number of surface pipe outlets:   1

Control Practice 16:  Wet Detention Pond CP# 8 (DS) - Pond 1.2P
   Particle Size Distribution file name:  Not needed - calculated by program
   Initial stage elevation (ft):   5
   Peak to Average Flow Ratio:   3.8
   Maximum flow allowed into pond (cfs):  No maximum value entered
```

Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.5
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 80
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 7

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0300	0.00	0.00
2	4.00	0.0600	0.00	0.00
3	5.00	0.1100	0.00	0.00
4	5.30	0.1100	0.00	0.00
5	6.30	0.1400	0.00	0.00
6	7.30	0.1700	0.00	0.00
7	8.30	0.1900	0.00	0.00
8	9.30	0.2200	0.00	0.00
9	10.30	0.2600	0.00	0.00

APPENDIX D

Infiltration Analysis

Infiltration Analysis Results

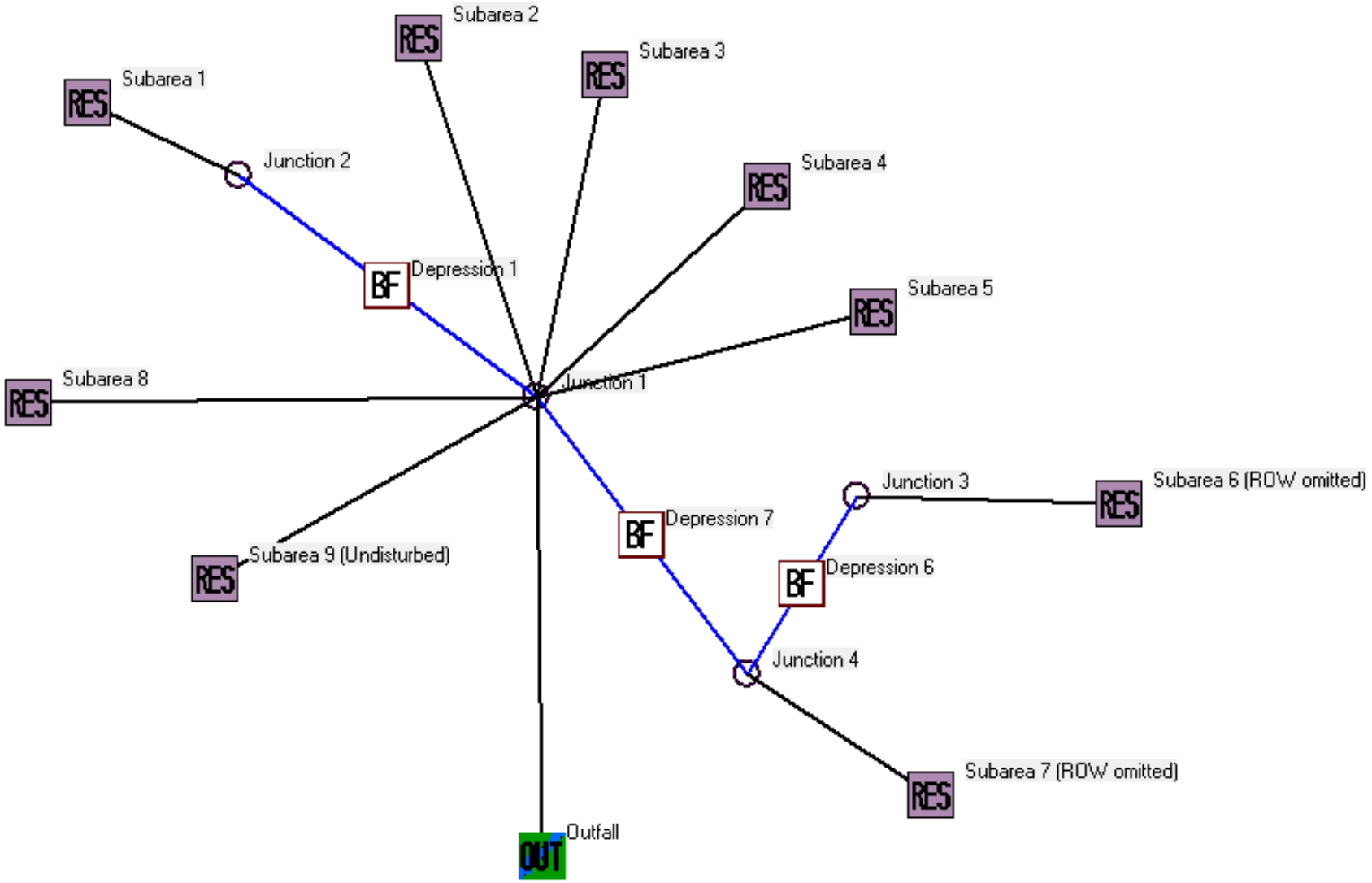
FOR: Welshire Farm
LOCATION: Town of Delafield, Wisconsin

Pre-Development					
Project Site	151.98	acres	=	6,620,249	sq-ft
Average Annual Rainfall	29.02	inches	=	2.42	feet
Total Rainfall Volume	16,009,968	cu-ft			
Total Runoff (from SLAMM Output)	1,694,304	cu-ft			
Total Pre-Development Infiltration Volume	14,315,664	cu-ft			

Post-Development		
Total Runoff (from SLAMM Output)	2,498,000	cu-ft
Total Post-Development Infiltration Volume	13,511,968	cu-ft

Percent Infiltrated	
Post Infiltration Vol / Pre Infiltration Vol	94.4%

Infiltration Analysis - Pre-Development



Data File: C:\Data\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Pre-Development.mdb
Rain File: WisReg - Milwaukee WI 1969.RAN
Date: 04-04-24 Time: 10:12:57 AM
Site Description:

Runoff Volume Total (cf) at the Outfall

Rain Number	Rain Total (in)	Outfall Total (cf)	Rv	Total Losses (in.)	Calculated CN*	Event Peak Flow (cfs)	Pre-Dev Runoff Vol. (cf)
Minimum:	0	0	0	0.01	74.3	0.001	0
Maximum:	1.96	198647	0.185	1.6	99.6	27.778	317661
Average:	0.25	9202	0.015	0.23	76.8	10.899	19037.1
Total:	29.02	1.067E+06		27.07			1694304

* Note: NRCS does not recommend using CN method for rains < 0.5 in.
See 'PreDevelopment Areas and CN' Help for more info.

SLAMM for Windows Version 10.5.0

Data file name: C:\Data\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Pre-Development.mdb
Data file description:
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Start of Winter Season: 12/06 End of Winter Season: 03/28
Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69
Date of run: 04-04-2024 Time of run: 10:13:54
Total Area Modeled (acres): 151.050
Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	1.170E+06	-	166.9	12194	-
Outfall Total with Controls:	1.067E+06	8.80%	161.1	10738	11.94%
Annualized Total After Outfall Controls:	1.082E+06			10887	

Data file name: C:\Data\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Pre-Development.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/05/69		Study period ending date: 12/31/69
Start of Winter Season: 12/06		End of Winter Season: 03/28
Date: 04-04-2024		Time: 10:14:01
Site information:

Pre-Development Area Description	Pre-Development Area (ac)	Pre-Development CN
cropland	88.490	83
impervious	.710	98
lawn	4.140	80
woods	57.710	77
Total Area (ac)/Composite CN	151.050	81

LU# 1 - Residential: Subarea 1		Total area (ac): 11.870
	45 - Large Landscaped Areas 1: 11.870 ac.	Normal Clayey	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 2 - Residential: Subarea 2		Total area (ac): 13.690
	45 - Large Landscaped Areas 1: 13.690 ac.	Normal Clayey	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 3 - Residential: Subarea 3		Total area (ac): 4.590
	45 - Large Landscaped Areas 1: 4.590 ac.	Normal Clayey	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 4 - Residential: Subarea 4		Total area (ac): 1.080
	45 - Large Landscaped Areas 1: 1.080 ac.	Normal Clayey	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 5 - Residential: Subarea 5		Total area (ac): 27.960
	45 - Large Landscaped Areas 1: 27.960 ac.	Normal Clayey	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 6 - Residential: Subarea 6 (ROW omitted)		Total area (ac): 10.630
	45 - Large Landscaped Areas 1: 10.630 ac.	Normal Clayey	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 7 - Residential: Subarea 7		Total area (ac): 12.630
	45 - Large Landscaped Areas 1: 12.630 ac.	Normal Clayey	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 8 - Residential: Subarea 8		Total area (ac): 26.250
	1 - Roofs 1: 0.230 ac.	Pitched	Disconnected	Normal Clayey	Low Density	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
	25 - Driveways 1: 0.480 ac.	Connected	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
	45 - Large Landscaped Areas 1: 25.540 ac.	Normal Clayey	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 9 - Residential: Subarea 9 (Undisturbed)		Total area (ac): 42.350
	57 - Undeveloped Areas 1: 42.350 ac.	Normal Clayey	Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

	Control Practice 1: Biofilter CP# 1 (DS) - Depression 1

```
   1.  Top area (square feet) =  190628
   2.  Bottom aea (square feet) =  19166
   3.  Depth (ft):   2
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.04
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   0.04
   12.  Engineered soil depth (ft) =  0
   13.  Engineered soil porosity =  0
   14. Percent solids reduction due to flow through engineered soil =  0
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   50
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   1.5

Control Practice 2:  Biofilter CP# 2 (DS) - Depression 6
   1.  Top area (square feet) =  55025
   2.  Bottom aea (square feet) =  200
   3.  Depth (ft):   1.1
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.07
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   0.07
   12.  Engineered soil depth (ft) =  0
   13.  Engineered soil porosity =  0
   14. Percent solids reduction due to flow through engineered soil =  0
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   8
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   0.5
```

Control Practice 3: Biofilter CP# 3 (DS) - Depression 7
1. Top area (square feet) = 29349
2. Bottom aea (square feet) = 100
3. Depth (ft): 1.1
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.07
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0.07
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

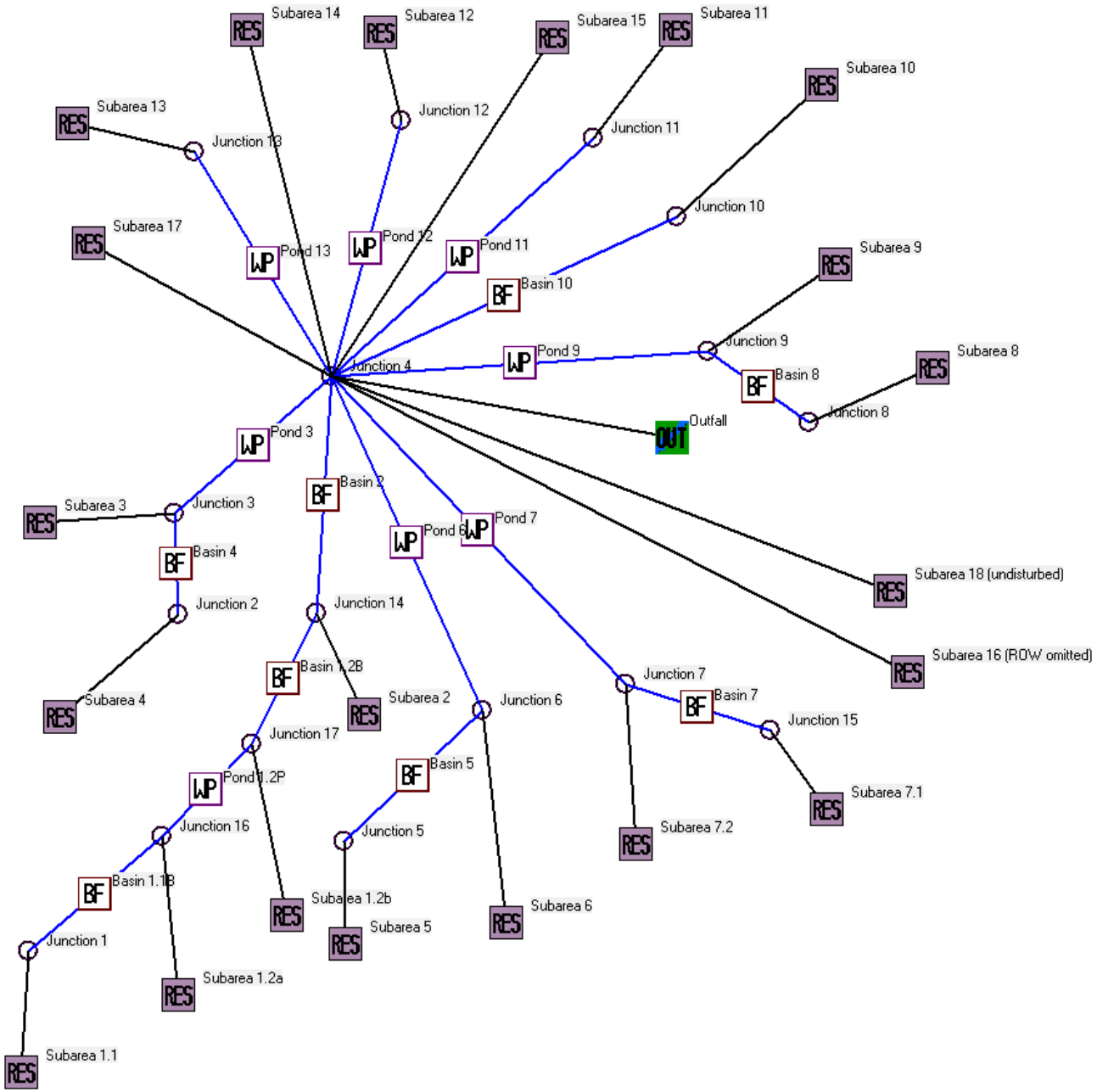
Soil Data Soil Type Fraction in Eng. Soil

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 8
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 0.5

Infiltration Analysis - Post-Development



SLAMM for Windows Version 10.5.0

Data file name: C:\Data\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Proposed_Disconnected.mdb
Data file description:
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Start of Winter Season: 12/06 End of Winter Season: 03/28
Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69
Date of run: 04-04-2024 Time of run: 10:23:55
Total Area Modeled (acres): 151.050
Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	2.818E+06	-	111.2	19560	-
Outfall Total with Controls:	2.498E+06	11.36%	28.82	4493	77.03%
Annualized Total After Outfall Controls:	2.532E+06			4555	

```
Data file name:  C:\Data\Jobs\2023\2023-003 - Thomas Farm - Welshire Farm - TRIO\Project_Information\Calcs\SLAMM\Proposed_Disconnected.mdb
WinSLAMM Version 10.5.0
Rain file name:  C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.RAN
Particulate Solids Concentration file name:  C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name:  C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name:  C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name:  C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name:  C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name:  C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name:  C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name:  C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance:  False
Pollutant Relative Concentration file name:  C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File:  C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator:  -42
Study period starting date:  01/05/69       Study period ending date:  12/31/69
Start of Winter Season:  12/06              End of Winter Season:  03/28
Date:  04-04-2024                           Time:  10:24:04
Site information:

LU# 1 - Residential:  Subarea 1.2a     Total area (ac):  5.520
     1 - Roofs 1:  0.910 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1:  0.080 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.530 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.270 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.840 ac.    Smooth    Street Length = 0.239 mi    Street Width = 28.99582 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.370 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.410 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.110 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 2 - Residential:  Subarea 2     Total area (ac):  1.880
     1 - Roofs 1:  0.190 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.180 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.310 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.030 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.030 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.320 ac.    Smooth    Street Length = 0.091 mi    Street Width = 29.01099 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.640 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.180 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 3 - Residential:  Subarea 3     Total area (ac):  11.090
     1 - Roofs 1:  0.920 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.910 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  1.020 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.180 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.170 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.550 ac.    Smooth    Street Length = 0.4409 mi    Street Width = 29.00317 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  4.600 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
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     57 - Undeveloped Areas 1:  1.520 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.220 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 4 - Residential:  Subarea 4     Total area (ac):  4.910
     1 - Roofs 1:  0.500 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.080 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.040 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.290 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 5 - Residential:  Subarea 5     Total area (ac):  2.430
     1 - Roofs 1:  0.250 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.040 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.010 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.130 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 6 - Residential:  Subarea 6     Total area (ac):  8.820
     1 - Roofs 1:  0.530 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.180 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     13 - Paved Parking 1:  0.190 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.330 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.210 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.070 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.480 ac.    Smooth    Street Length = 0.421 mi    Street Width = 29.00237 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  3.040 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.640 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.150 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 7 - Residential:  Subarea 7b     Total area (ac):  6.660
     1 - Roofs 1:  0.520 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.520 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.310 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.090 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.080 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.410 ac.    Smooth    Street Length = 0.1166 mi    Street Width = 29.00943 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  3.070 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.450 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.210 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 8 - Residential:  Subarea 8     Total area (ac):  5.090
     1 - Roofs 1:  0.500 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.270 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.430 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.890 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 9 - Residential:  Subarea 9     Total area (ac):  10.750
     1 - Roofs 1:  0.620 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.620 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.660 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.130 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.130 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.420 ac.    Smooth    Street Length = 0.404 mi    Street Width = 28.99752 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  5.320 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.440 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.410 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
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LU# 10 - Residential:  Subarea 10     Total area (ac):  1.750
     1 - Roofs 1:  0.190 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.050 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.970 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.540 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 11 - Residential:  Subarea 11     Total area (ac):  7.440
     1 - Roofs 1:  0.790 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.260 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.620 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.150 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.050 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  1.100 ac.    Smooth    Street Length = 0.3129 mi    Street Width = 29.00288 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  3.640 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.600 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.230 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 12 - Residential:  Subarea 12     Total area (ac):  6.970
     1 - Roofs 1:  0.450 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.450 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.290 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.160 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.160 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.390 ac.    Smooth    Street Length = 0.1109 mi    Street Width = 29.01262 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.750 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.190 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.130 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 13 - Residential:  Subarea 13     Total area (ac):  3.930
     1 - Roofs 1:  0.200 ac.    Pitched    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.200 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.170 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.040 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     32 - Sidewalks 2:  0.030 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.370 ac.    Smooth    Street Length = 0.1053 mi    Street Width = 28.9886 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.350 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.370 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     70 - Water Body Areas:  0.200 ac.    Source Area PSD File: C:\WinSLAMM Files\\Residential Land Use
LU# 14 - Residential:  Subarea 14     Total area (ac):  1.740
     1 - Roofs 1:  0.090 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.020 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.020 ac.    Smooth    Street Length = 0.0057 mi    Street Width = 28.94737 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.290 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.320 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 15 - Residential:  Subarea 15     Total area (ac):  4.060
     1 - Roofs 1:  0.500 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.220 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.060 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.280 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 16 - Residential:  Subarea 16 (undisturbed areas included)     Total area (ac):  10.880
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     1 - Roofs 1:  0.420 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     2 - Roofs 2:  0.030 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     25 - Driveways 1:  0.060 ac.    Connected    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     26 - Driveways 2:  0.160 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.100 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.240 ac.    Smooth    Street Length = 0.0683 mi    Street Width = 28.98975 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  2.980 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  6.890 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 17 - Residential:  Subarea 17     Total area (ac):  2.970
     1 - Roofs 1:  0.450 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.080 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     37 - Streets 1:  0.030 ac.    Smooth    Street Length = 0.0085 mi    Street Width = 29.11765 ft     Street Edges = 2
            Default St. Dirt Accum.    Annual Winter Load = 2500 lbs    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.960 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  1.450 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 18 - Residential:  Subarea 7a     Total area (ac):  4.910
     1 - Roofs 1:  0.400 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.270 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.750 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.490 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 19 - Residential:  Subarea 1.1     Total area (ac):  2.180
     1 - Roofs 1:  0.260 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.070 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  0.900 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  0.950 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 20 - Residential:  Subarea 1.2b     Total area (ac):  4.720
     1 - Roofs 1:  0.640 ac.    Pitched    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     31 - Sidewalks 1:  0.230 ac.    Disconnected    Normal Clayey    Low Density    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     51 - Small Landscaped Areas 1:  1.720 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
     57 - Undeveloped Areas 1:  2.130 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
LU# 21 - Residential:  Subarea 18 (undisturbed)     Total area (ac):  42.350
     57 - Undeveloped Areas 1:  42.350 ac.    Normal Clayey    Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

      Control Practice 1:  Wet Detention Pond CP# 1 (DS) - Pond 3
         Particle Size Distribution file name:  Not needed - calculated by program
         Initial stage elevation (ft):   5
         Peak to Average Flow Ratio:   3.8
         Maximum flow allowed into pond (cfs):  No maximum value entered
         Outlet Characteristics:
              Outlet type:  Sharp Crested Weir
                     1.  Sharp crested weir length (ft):   1
                     2.  Sharp crested weir height from invert:   3.5
                     3.  Sharp crested weir invert elevation above datum (ft):   7.5
              Outlet type:  Orifice 1
                     1.  Orifice diameter (ft):   0.25
                     2.  Number of orifices:   1
                     3.  Invert elevation above datum (ft):   5
              Outlet type:  Broad Crested Weir
                     1.  Weir crest length (ft):   10
                     2.  Weir crest width (ft):   10
```

3. Height from datum to bottom of weir opening: 10
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 8.5
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0800	0.00	0.00
2	4.00	0.1300	0.00	0.00
3	5.00	0.2200	0.00	0.00
4	6.00	0.2600	0.00	0.00
5	7.00	0.3000	0.00	0.00
6	8.00	0.3400	0.00	0.00
7	9.00	0.3900	0.00	0.00
8	10.00	0.4300	0.00	0.00
9	11.00	0.4800	0.00	0.00

Control Practice 2: Biofilter CP# 1 (DS) - Basin 4
1. Top area (square feet) = 29403
2. Bottom aea (square feet) = 9668
3. Depth (ft): 4
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 3.6
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0
Soil Data Soil Type Fraction in Eng. Soil
User-Defined Media Type 1.000
Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 0
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 3
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 2

```
       Outlet type:  Surface Discharge Pipe
              1.  Surface discharge pipe outlet diameter (ft):   0.33
              2.  Pipe invert elevation above datum (ft):   1
              3.  Number of surface pipe outlets:   1

Control Practice 3:  Biofilter CP# 2 (DS) - Basin 5
   1.  Top area (square feet) =  14340
   2.  Bottom aea (square feet) =  3116
   3.  Depth (ft):   5.5
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.07
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   0.07
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                        Soil Type Fraction in Eng. Soil
       User-Defined Media Type                1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   0.07
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   10
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   4.5
       Outlet type:  Vertical Stand Pipe
              1.  Stand pipe diameter (ft):   3
              2.  Stand pipe height above datum (ft):   4
       Outlet type:  Surface Discharge Pipe
              1.  Surface discharge pipe outlet diameter (ft):   0.25
              2.  Pipe invert elevation above datum (ft):   1.5
              3.  Number of surface pipe outlets:   1

Control Practice 4:  Wet Detention Pond CP# 2 (DS) - Pond 6
   Particle Size Distribution file name:  Not needed - calculated by program
   Initial stage elevation (ft):   5
   Peak to Average Flow Ratio:   3.8
   Maximum flow allowed into pond (cfs):  No maximum value entered
   Outlet Characteristics:
        Outlet type:  Sharp Crested Weir
              1.  Sharp crested weir length (ft):   1
```

2. Sharp crested weir height from invert: 3
3. Sharp crested weir invert elevation above datum (ft): 8

Outlet type: Orifice 1
1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 10

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 9

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0200	0.00	0.00
2	4.00	0.0800	0.00	0.00
3	5.00	0.1500	0.00	0.00
4	6.00	0.1900	0.00	0.00
5	7.00	0.2300	0.00	0.00
6	8.00	0.2900	0.00	0.00
7	9.00	0.3900	0.00	0.00
8	10.00	0.6100	0.00	0.00
9	11.00	0.8800	0.00	0.00

Control Practice 5: Wet Detention Pond CP# 3 (DS) - Pond 7
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:

Outlet type: Sharp Crested Weir
1. Sharp crested weir length (ft): 1
2. Sharp crested weir height from invert: 1.2
3. Sharp crested weir invert elevation above datum (ft): 7

Outlet type: Orifice 1
1. Orifice diameter (ft): 0.33
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 8

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 8

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)

0	0.00	0.0000	0.00	0.00
1	0.01	0.0500	0.00	0.00
2	4.00	0.1100	0.00	0.00
3	5.00	0.2100	0.00	0.00
4	5.20	0.4600	0.00	0.00
5	6.20	0.6600	0.00	0.00
6	7.20	0.8500	0.00	0.00
7	8.20	1.1600	0.00	0.00

Control Practice 6: Biofilter CP# 3 (DS) - Basin 8
1. Top area (square feet) = 21754
2. Bottom aea (square feet) = 9881
3. Depth (ft): 6.3
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.04
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0.04
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil
User-Defined Media Type 1.000
Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 0.04
Biofilter Outlet/Discharge Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 5.3
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 4
Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.25
2. Pipe invert elevation above datum (ft): 1.25
3. Number of surface pipe outlets: 1

Control Practice 7: Wet Detention Pond CP# 4 (DS) - Pond 9
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Orifice 1
1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 10
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 9.75
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.1500	0.00	0.00
2	4.00	0.3500	0.00	0.00
3	5.00	0.4100	0.00	0.00
4	6.00	0.4600	0.00	0.00
5	7.00	0.5100	0.00	0.00
6	8.00	0.5600	0.00	0.00
7	9.00	0.6100	0.00	0.00
8	10.00	0.6700	0.00	0.00
9	11.00	0.8000	0.00	0.00

Control Practice 8: Biofilter CP# 4 (DS) - Basin 10
1. Top area (square feet) = 13995
2. Bottom aea (square feet) = 5480
3. Depth (ft): 6
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0.5
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0
Soil Data Soil Type Fraction in Eng. Soil
User-Defined Media Type 1.000
Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0

```
        Infiltration rate (in/hr) =   0.5
        Biofilter Outlet/Discharge Characteristics:
      Outlet type:  Broad Crested Weir
             1.  Weir crest length (ft):   10
             2.  Weir crest width (ft):   10
             3.  Height of datum to bottom of weir opening:   5
      Outlet type:  Vertical Stand Pipe
             1.  Stand pipe diameter (ft):   3
             2.  Stand pipe height above datum (ft):   3
      Outlet type:  Surface Discharge Pipe
             1.  Surface discharge pipe outlet diameter (ft):   0.25
             2.  Pipe invert elevation above datum (ft):   2
             3.  Number of surface pipe outlets:   1

Control Practice 9:  Wet Detention Pond CP# 5 (DS) - Pond 11
   Particle Size Distribution file name:  Not needed - calculated by program
   Initial stage elevation (ft):   5
   Peak to Average Flow Ratio:   3.8
   Maximum flow allowed into pond (cfs):  No maximum value entered
   Outlet Characteristics:
        Outlet type:  Sharp Crested Weir
             1.  Sharp crested weir length (ft):   1
             2.  Sharp crested weir height from invert:   2.5
             3.  Sharp crested weir invert elevation above datum (ft):   7.5
        Outlet type:  Orifice 1
             1.  Orifice diameter (ft):   0.25
             2.  Number of orifices:   1
             3.  Invert elevation above datum (ft):   5
        Outlet type:  Broad Crested Weir
             1.  Weir crest length (ft):   10
             2.  Weir crest width (ft):   10
             3.  Height from datum to bottom of weir opening:   10
        Outlet type:  Vertical Stand Pipe
             1.  Stand pipe diameter (ft):   3
             2.  Stand pipe height above datum (ft):   8.5
   Pond stage and surface area
           Entry       Stage     Pond Area   Natural Seepage   Other Outflow
           Number      (ft)      (acres)             (in/hr)                  (cfs)
              0          0.00        0.0000           0.00                    0.00
              1          0.01        0.0700           0.00                    0.00
              2          4.00        0.1400           0.00                    0.00
              3          5.00        0.2300           0.00                    0.00
              4          5.50        0.2600           0.00                    0.00
              5          6.50        0.3100           0.00                    0.00
              6          7.50        0.3800           0.00                    0.00
              7          8.50        0.4500           0.00                    0.00
              8          9.50        0.5400           0.00                    0.00
              9          10.00       0.5800           0.00                    0.00

Control Practice 10:  Wet Detention Pond CP# 6 (DS) - Pond 12
   Particle Size Distribution file name:  Not needed - calculated by program
```

Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Sharp Crested Weir
1. Sharp crested weir length (ft): 1
2. Sharp crested weir height from invert: 3.5
3. Sharp crested weir invert elevation above datum (ft): 6.5
Outlet type: Orifice 1
1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 9
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 7.25
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.10	0.0300	0.00	0.00
2	4.00	0.0600	0.00	0.00
3	5.00	0.1300	0.00	0.00
4	6.00	0.1700	0.00	0.00
5	7.00	0.2100	0.00	0.00
6	8.00	0.2700	0.00	0.00
7	9.00	0.3300	0.00	0.00
8	10.00	0.4200	0.00	0.00

Control Practice 11: Wet Detention Pond CP# 7 (DS) - Pond 13
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Orifice 1
1. Orifice diameter (ft): 0.33
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 7.5
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 7
Pond stage and surface area

Entry	Stage	Pond Area	Natural Seepage	Other Outflow

Number	(ft)	(acres)	(in/hr)	(cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0300	0.00	0.00
2	4.00	0.1000	0.00	0.00
3	5.00	0.2000	0.00	0.00
4	5.70	0.2300	0.00	0.00
5	6.70	0.2800	0.00	0.00
6	7.70	0.3300	0.00	0.00
7	8.50	0.3700	0.00	0.00

Control Practice 12: Biofilter CP# 5 (DS) - Basin 1.1B
1. Top area (square feet) = 30877
2. Bottom aea (square feet) = 6930
3. Depth (ft): 5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.11
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 1
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data — Soil Type Fraction in Eng. Soil
User-Defined Media Type — 1.000
Saturation water content (Porosity) = 0
Field capacity (fraction) = 0
Permanent Wilting Point (fraction) = 0
Infiltration rate (in/hr) = 3.6

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir
1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 4

Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 3.5

Outlet type: Surface Discharge Pipe
1. Surface discharge pipe outlet diameter (ft): 0.5
2. Pipe invert elevation above datum (ft): 1.5
3. Number of surface pipe outlets: 1

Control Practice 13: Biofilter CP# 6 (DS) - Basin 2
1. Top area (square feet) = 2688
2. Bottom aea (square feet) = 1074

```
   3.  Depth (ft):   4
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  1.63
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                       Soil Type Fraction in Eng. Soil
       User-Defined Media Type                  1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   3.6
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   10
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   1.5
       Outlet type:  Surface Discharge Pipe
              1.  Surface discharge pipe outlet diameter (ft):   1
              2.  Pipe invert elevation above datum (ft):   1
              3.  Number of surface pipe outlets:   1

Control Practice 14:  Biofilter CP# 7 (DS) - Basin 7
   1.  Top area (square feet) =  13868
   2.  Bottom aea (square feet) =  3858
   3.  Depth (ft):   3.2
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.11
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   1
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   0.11
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
```

```
        Soil Data                       Soil Type Fraction in Eng. Soil
       User-Defined Media Type                1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   0.11
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   8
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   1.2

Control Practice 15:  Biofilter CP# 8 (DS) - Basin 1.2B
   1.  Top area (square feet) =  76565
   2.  Bottom aea (square feet) =  13403
   3.  Depth (ft):   5.8
   4.  Biofilter width (ft) - for Cost Purposes Only:   10
   5.  Infiltration rate (in/hr) =  0.11
   6.  Random infiltration rate generation?  No
   7.  Infiltration rate fraction (side):   0.001
   8.  Infiltration rate fraction (bottom):   1
   9.  Depth of biofilter that is rock filled (ft) 0
   10.  Porosity of rock filled volume =  0
   11.  Engineered soil infiltration rate:   3.6
   12.  Engineered soil depth (ft) =  1
   13.  Engineered soil porosity =  0.27
   14. Percent solids reduction due to flow through engineered soil =  80
   15. Biofilter peak to average flow ratio =  3.8
   16. Number of biofiltration control devices =  1
   17. Particle size distribution file:  Not needed - calculated by program
   18. Initial water surface elevation (ft):   0
        Soil Data                       Soil Type Fraction in Eng. Soil
       User-Defined Media Type                1.000
        Saturation water content (Porosity) =   0
        Field capacity (fraction) =   0
        Permanent Wilting Point (fraction) =   0
        Infiltration rate (in/hr) =   3.6
        Biofilter Outlet/Discharge Characteristics:
       Outlet type:  Broad Crested Weir
              1.  Weir crest length (ft):   10
              2.  Weir crest width (ft):   10
              3.  Height of datum to bottom of weir opening:   4.8
       Outlet type:  Vertical Stand Pipe
              1.  Stand pipe diameter (ft):   3
              2.  Stand pipe height above datum (ft):   3.55
       Outlet type:  Surface Discharge Pipe
              1.  Surface discharge pipe outlet diameter (ft):   0.5
              2.  Pipe invert elevation above datum (ft):   1
              3.  Number of surface pipe outlets:   1

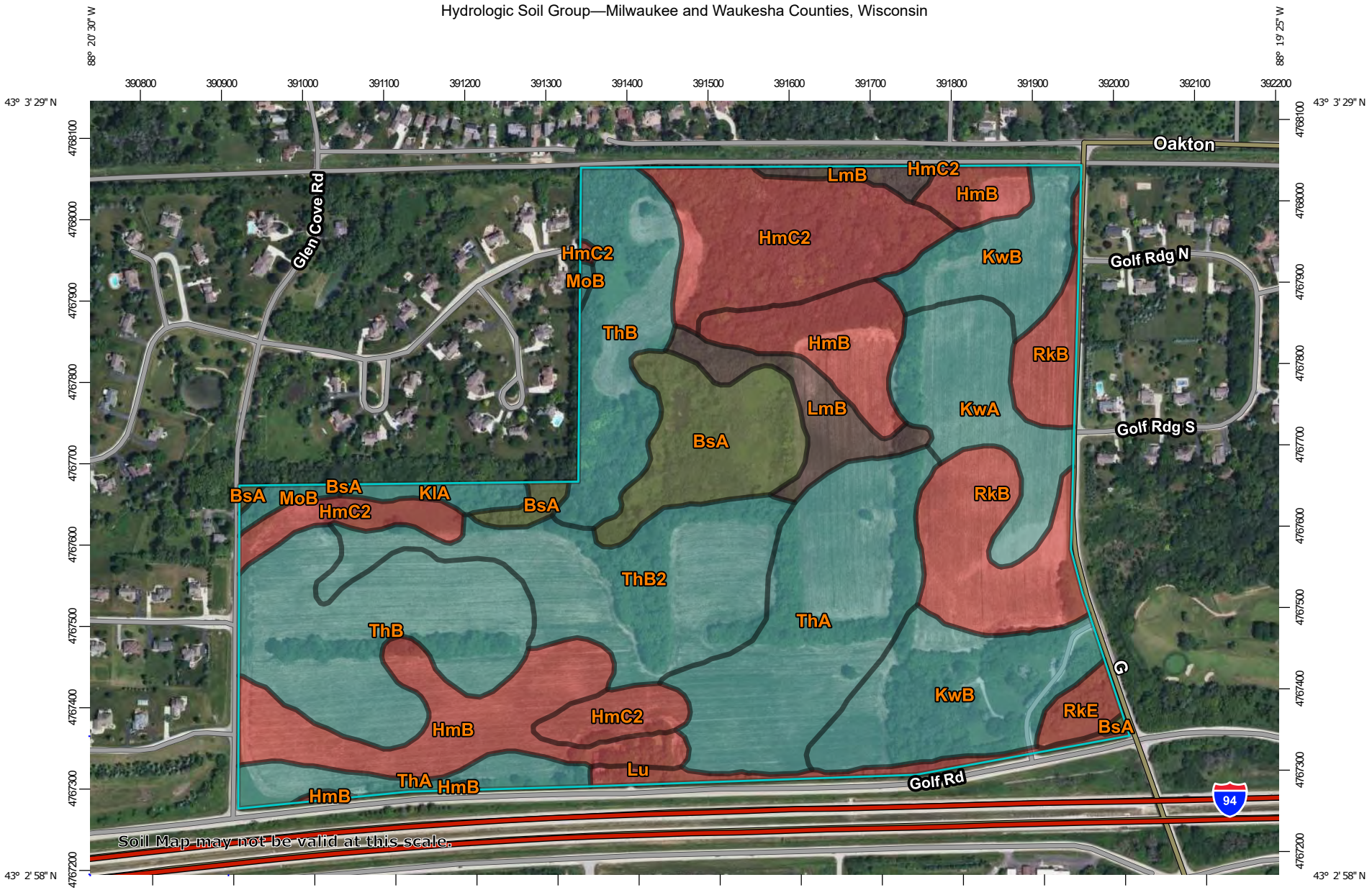
Control Practice 16:  Wet Detention Pond CP# 8 (DS) - Pond 1.2P
```

Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
    Outlet type: Orifice 1
        1. Orifice diameter (ft): 0.5
        2. Number of orifices: 1
        3. Invert elevation above datum (ft): 5
    Outlet type: Broad Crested Weir
        1. Weir crest length (ft): 80
        2. Weir crest width (ft): 10
        3. Height from datum to bottom of weir opening: 7
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0300	0.00	0.00
2	4.00	0.0600	0.00	0.00
3	5.00	0.1100	0.00	0.00
4	5.30	0.1100	0.00	0.00
5	6.30	0.1400	0.00	0.00
6	7.30	0.1700	0.00	0.00
7	8.30	0.1900	0.00	0.00
8	9.30	0.2200	0.00	0.00
9	10.30	0.2600	0.00	0.00

APPENDIX E

Soil Survey and Soil Boring Logs



Map Scale: 1:6,700 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Milwaukee and Waukesha Counties, Wisconsin
Survey Area Data: Version 18, Sep 7, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 6, 2020—Jun 28, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BsA	Brookston silt loam, 0 to 2 percent slopes	C/D	9.4	6.0%
HmB	Hochheim loam, 2 to 6 percent slopes	D	18.7	12.1%
HmC2	Hochheim loam, 6 to 12 percent slopes, eroded	D	16.9	10.9%
KlA	Kendall silt loam, 1 to 3 percent slopes	C	1.4	0.9%
KwA	Knowles silt loam, 0 to 2 percent slopes	C	8.6	5.6%
KwB	Knowles silt loam, 2 to 6 percent slopes	C	17.0	11.0%
LmB	Lamartine silt loam, 0 to 3 percent slopes	B/D	5.2	3.3%
Lu	Loamy land	D	1.9	1.2%
MoB	Mayville silt loam, 2 to 6 percent slopes	C	0.9	0.6%
RkB	Ritchey silt loam, 1 to 6 percent slopes	D	11.2	7.2%
RkE	Ritchey silt loam, 12 to 30 percent slopes	D	1.5	1.0%
ThA	Theresa silt loam, 0 to 2 percent slopes	C	20.6	13.2%
ThB	Theresa silt loam, 2 to 6 percent slopes	C	26.1	16.8%
ThB2	Theresa silt loam, 2 to 6 percent slopes, eroded	C	15.7	10.1%
Totals for Area of Interest			**155.2**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

GEOTECHNICAL ENGINEERING REPORT

Thomas Farm Development
NWC Golf Road and Elmhurst Road
Town of Delafield, Wisconsin

GESTRA Project No.: 23083-10
May 15, 2023

Prepared For:
Neumann Developments, Inc.
N27W24025 Paul Court, Suite 100
Pewaukee, WI 53072

GESTRA

Geotechnical Engineering Report

Thomas Farm Development
NWC Golf Road and Elmhurst Road
Town of Delafield, Wisconsin

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May 15, 2023

Prepared For:

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N27W24025 Paul Court, Suite 100
Pewaukee, WI 53072

Prepared By:

GESTRA Engineering, Inc.
191 W. Edgerton Avenue
Milwaukee, WI 53207
(414) 933-7444

Table of Contents

Geotechnical Engineering Report

Thomas Farm Development
NWC Golf Road and Elmhurst Road
Town of Delafield, Wisconsin

1.0 INTRODUCTION

GESTRA Engineering, Inc. (GESTRA) was authorized by Neuman Developments, Inc. (Neumann) to complete a subsurface exploration and geotechnical engineering report for the Thomas Farms Development project located at the northwest corner of Golf Road and Elmhurst Road in the Town of Delafield, Wisconsin. This report presents the results from the subsurface soil exploration and describes the field exploration, laboratory test results, and provides recommendations pertaining to the design and construction of the proposed buildings, roads and stormwater basins.

The engineering recommendations and analysis contained within this report are based on the following project information which is a projection of GESTRA's understanding of the project. If for any reason the actual project information differs from what is reported below, GESTRA should be contacted so that we can review our recommendations in light of any new information.

1.1 PROJECT INFORMATION

The site is bounded by the Lake County Recreation Trail on the north, Elmhurst Road on the east, an existing subdivision in the northwest, Glen Cove Road on the west and Golf Road on the south. The site plan is divided into 4 zones, described as follows and shown on the Borehole Location Plan in the Appendix. At this time, preliminary stormwater elevations are available, but detailed grading plans have not been completed.

Zone 1 – northwest quadrant. This section will include an eastern cul-de-sac extension of Crooked Creek Road and 8 single-family house lots around the cul-de-sac. A detention pond is planned on the north side.

Zone 2 – northeast quadrant. This zone includes 29 single-family house lots, a portion of the east loop road and a cul-de-sac. Detention ponds are planned on the north and west sides, a biofiltration basin near the center and dry pond basin in the southern part.

Zone 3 – southwest quadrant. This zone includes 37 single-family house lots, 28 duplex condos, west loop road with cul-de-sac and connection to the east loop road, and clubhouse amenities building. Three detention ponds are planned in the northern part and a biofiltration basin on the south side.

Zone 4 – southeast quadrant. This zone includes 81 single-family house lots, part of the east loop road with two cul-de-sacs and connection to the west loop road. Three detention ponds are planned in the west, center and southeast portions and rain garden on the south side.

2.0 SCOPE OF SERVICES

GESTRA has performed the following services for the project:

- Contacted Diggers Hotline to locate the public utilities at the site.
- Completed thirty-nine (39) standard penetration test (SPT) soil borings to depths between 4 ½ feet and 19 feet below existing grades. All borings encountered split spoon and/or auger refusal at termination. At the completion of drilling, boreholes were abandoned per WDNR requirements.
- Performed laboratory soil testing to assign classification and engineering properties to the soils encountered. The laboratory testing included hand penetrometer, moisture content, mechanical analysis, hydrometers, and Atterberg limits.
- Prepared this geotechnical engineering report presenting the results of the field exploration, laboratory testing, and providing a discussion of the subsurface conditions and the following recommendations:
    a. Buildings: general recommendations for allowable soil bearing capacity for spread foundations, estimates of settlement, anticipation and management of groundwater, subgrade modulus for design of slab on grade, lateral earth pressures, seismic site classification, and site preparation/ soil correction.
    b. Pavement: soil parameters for the pavement design consisting of estimated CBR values, and asphalt, concrete and base course thickness for the proposed roadways based on anticipated traffic volumes.
    c. Stormwater: The soil from the borings were classified per the USCS system and the Field Book for Describing and Sampling Soils, USDA, NRCS, 2012. Provided DSPS Soil and Site Evaluation – Storm forms and a discussion of soils conditions and recommendations related to infiltration and detention basin design.

3.0 EXPLORATION RESULTS

3.1 SITE CONDITIONS

The development is planned within the undeveloped parcels bounded by Golf Road to the south, Elmhurst Road to the east, Glen Cove Road to the west and the Lake County Recreation Trail/Oakton Road to the north. The majority of the development is in the southern and eastern portion which is currently farm field with several tree lines. The development in the northwest portion is located in an area that is a combination of open field and woods. Two existing residential buildings are located in the southeast part of the development and are accessible from Thomas Road which connects Golf Road and Elmhurst Road. A third residential building is located on the south side of the property near the approximate mid-point of the development. Based on historical aerial photographs available on the Waukesha County GIS website, the site has remained unchanged since the 1960's.

The topography varies significantly across the development area. The northwest portion ranges from approximately 895 feet to 915 feet, generally sloping upward from the north to the south. The highest elevation portion of the development is in the southwest part around 945 feet. From this location it slopes downward to the north to around 915 feet and slopes downward toward the east with elevations ranging from 910 or 915 feet in the southeast portion and 900 feet in the northeast portion. Ground surface elevations at our boring locations range from 946.1 feet at B-29

in the southwest, 916.3 feet at B-22 in the southeast, 899.7 feet at B-1 in the northeast, and 899.3 feet at B-37 in the northwest.

3.2 SUBSURFACE SOIL PROFILE

The general soil profile consisted of topsoil underlain by lean clay or silty clay over granular soil with various amounts of fines (silt and clay soil). At multiple boring location auger refusal was encountered and can be an indication of possible bedrock. Table 3-1 provides the depth and elevation of auger refusal at the boring locations. The topsoil thickness was typically less than 1 foot at each boring location with the exception of B-30 where approximately 2-feet of topsoil was observed.

The native lean clay was typically encountered with a medium stiff to very stiff consistency and extended to approximate depths of 2 feet to 11 ½ feet. In some shallower borings the clay extended to auger refusal. The native clay had varying amounts of sand and moisture contents of samples tested ranged from 8.3% to 30.3% with the majority of the samples tested having moisture contents greater than 20%.

Clayey sand was observed in approximately half the borings and was typically below the upper lean clay or silty clay. Based on SPT N-values, the clayey sand ranged from very loose to medium dense. Varying amounts of gravel were noted in the material.

The majority of the borings included a granular layer (sand or gravel) with varying amounts of silt above auger refusal. Based on SPT N-values, the granular material typically ranged from medium dense to very dense. Some locations of very dense soil encountered may be considered weathered bedrock. An exception to this was boring B-33 where a blueish gray medium dense to very dense silt was encountered between the upper clayey sand and auger refusal.

Table 3-1: Auger Refusal Depths (feet)

Ground Surface Elevation	Boring	Refusal Depth	Refusal Elevation	Ground Surface Elevation	Boring	Refusal Depth	Refusal Elevation
899.7	B-1	12.5	887.2	917.7	B-21	4.5	913.2
906.9	B-2	8.5	898.4	916.3	B-22	8	908.3
915.6	B-3	10	905.6	940.4	B-23	10.5	929.9
919.8	B-4	9.5	910.3	940.7	B-24	10.5	930.2
917.7	B-5	6.5	911.2	932.6	B-25	12	920.6
912.4	B-6	13.5	898.9	938.3	B-26	16	922.3
916.3	B-7	9.5	906.8	939.0	B-27	15	924.0
918.7	B-8	6.5	912.2	943.4	B-28	16	927.4
919.2	B-9	9	910.2	946.1	B-29	20	926.1
920.8	B-10	12	908.8	948.5	B-30	13	935.5
917.8	B-11	5.5	912.3	939.7	B-31	15	924.7
917.4	B-12	5	912.4	939.7	B-32	16	923.7
921.7	B-13	4.5	917.2	924.1	B-33	17	907.1
925.2	B-14	7.5	917.7	929.6	B-34	11	918.6
926.8	B-15	9.5	917.3	937.8	B-35	13	924.8
930.5	B-16	8.5	922.0	900.7	B-36	15.5	885.2

Ground Surface Elevation	Boring	Refusal Depth	Refusal Elevation
925.0	B-17	8.5	916.5
931.2	B-18	6.5	924.7
934.9	B-19	9.5	925.4
925.6	B-20	6.5	919.1

Ground Surface Elevation	Boring	Refusal Depth	Refusal Elevation
899.3	B-37	17.5	881.8
910.0	B-38	19	891.0
911.7	B-39	17.5	894.2

Notes: Ground surface elevation at B-36 obtained by GESTRA, all other ground surface elevations provided by Trio.

GESTRA reviewed the "Preliminary depth to bedrock map of Waukesha County, Wisconsin" available from the Wisconsin Geological and Natural History Survey. The map indicates that depth to bedrock in the project area is typically less than 50 feet in the project area.

Results of the field and laboratory tests and observations are depicted on the individual boring logs included in Appendix I of this report. Soils were grouped together based on similar observed properties. The stratification lines were estimated by the reviewing engineer based on available data and experience. The actual in-situ changes between layers may differ slightly and may be more gradual than depicted on the boring logs. Subsurface and groundwater conditions can vary between borehole locations and in areas not explored.

It is important to note that the soil observations, fill depths, and topsoil thickness estimates were made in small diameter boreholes. Therefore, it should be understood that thicker or thinner deposits of the individual strata are likely to be encountered within other portions of the project. Furthermore, the estimation of strata thickness at a particular location can differ from person to person due to a sometimes indistinct transition between the soils encountered. Additionally, it must be recognized that in the absence of foreign substances and/or debris within the soil samples obtained, it is sometimes difficult to distinguish between natural soils and clean soil fill.

3.3 GROUNDWATER OBSERVATIONS

Groundwater observations were typically completed during and at the completion of drilling operations. Select borings were left open for extended water level readings. The shallower groundwater appeared to be more common in the western portion of the project site. Table 3-2 provides a summary of the highest water level measured at each boring. If the extended water level readings varied by more than 1 foot from the during or after drilling water levels, both values are listed. Refer to the individual boring logs for specific information.

Table 3-2: Groundwater Measurements (feet)

Ground Surface Elevation	Boring	Groundwater	
		Depth	Elevation
899.7	B-1	4	895.7
906.9	B-2	5	901.9
915.6	B-3	NE	-
919.8	B-4	NE	-
917.7	B-5	NE	-
912.4	B-6	NE	-

Ground Surface Elevation	Boring	Groundwater	
		Depth	Elevation
917.7	B-21	NE	-
916.3	B-22	NE	-
940.4	B-23	NE	-
940.7	B-24	NE	-
932.6	B-25	7	925.6
938.3	B-26	11 [a] 5 [b]	927.3 [a] 933.3 [b]

Ground Surface Elevation	Boring	Groundwater	
		Depth	Elevation
916.3	B-7	3 [a] 0.4 [b]	913.3 [a] 915.9 [b]
918.7	B-8	NMR	NMR
919.2	B-9	NMR	NMR
920.8	B-10	NE	-
917.8	B-11	NE	-
917.4	B-12	NE	-
921.7	B-13	NE	-
925.2	B-14	NE	-
926.8	B-15	NE	-
930.5	B-16	7.5	923.0
925.0	B-17	8	917.0
931.2	B-18	NE	-
934.9	B-19	NE	-
925.6	B-20	NE	-

Ground Surface Elevation	Boring	Groundwater	
		Depth	Elevation
939.0	B-27	10	928.96
943.4	B-28	14 [a] 12 [b]	929.4 [a] 931.4 [b]
946.1	B-29	13	933.1
948.5	B-30	NE	-
939.7	B-31	8	931.7
939.7	B-32	8	931.7
924.1	B-33	3.5 [a] 2 [b]	920.6 [a] 922.1 [b]
929.6	B-34	8 [a] 3 [b]	921.6 [a] 926.6 [b]
937.8	B-35	9	928.8
900.7	B-36	4	896.7
899.3	B-37	7 [a] 5.5 [b]	892.3 [a] 893.8 [b]
910.0	B-38	NE	-
911.7	B-39	13 [a] 2 [b]	898.7 [a] 909.7 [b]

Notes: *Ground surface elevation at B-36 obtained by GESTRA, all other ground surface elevations provided by Trio.*

B-8, B-9: Clayey soils to depth of boring.

a – At completion of drilling water level reading.

b- Extended water level reading.

Groundwater level fluctuations may occur with time and seasonal changes due to variations in precipitation, evaporation, surface water runoff and local dewatering. Perched water pockets and a higher water table may also be encountered during wet weather periods, particularly in more permeable silt and sand seams or granular fill material overlying less permeable clays. Installation and monitoring of an observation well would be required to assess true groundwater elevation.

4.0 ANALYSIS AND RECOMMENDATIONS

4.1 GEOTECHNICAL CONSIDERATIONS

Based on the conditions encountered at site, we have identified potential subsurface conditions that may impact future building and site development in the following paragraphs.

Difficult Excavation: One of the primary concerns is the presence of very dense (SPT N>50) materials and possible bedrock at shallower depths. Based on preliminary plan elevation, some locations of stormwater features are designed at a lower elevation than the possible bedrock encountered. The remaining site grades have not been established, but other portions of this project may require excavation through dense to very dense ground conditions or bedrock which can result

in increased excavation costs. Additional exploration with test pits can provide a better indication of the anticipated difficulty in excavation of the material when additional project design elevations are available. Depending on the depth of excavation, the project may want to evaluate blasting.

High Moisture Content Clay Soils: Another geotechnical concern identified is the presence of higher moisture content lean clay generally located immediately below the topsoil. These soils are often unstable during earthwork, prone to disturbance by construction traffic and can lose strength over time when subjected to freeze thaw cycles, moisture entering through cracks in pavement, and repetitive traffic loading. Consolidation of this soft soil layer will occur if any new loads either from new fill and/or new structure are applied on this deposit which may lead to excessive settlement for future site construction or buildings.

Potential for Large Fill Placement: Significant cut and fill may be required during grading operations. Large and deeper fills over lower strength material may result in consolidation of the material and excessive settlement due to the weight of the new fill. Further evaluation may be required when design elevations are available.

Groundwater: Based on preliminary plan elevation, some locations of stormwater features are designed at a lower elevation than the water noted in our borings. The water may also be a concern for below grade levels for new buildings and in some excavation areas localized water should be expected. Groundwater was observed higher after completion or in next day water level readings at some locations. Further evaluation may be required when design elevations are available.

Variable Depths to Bearing Material: The estimated depth to recommended bearing material presented in this report is variable across the site. When design elevations and building loads are available, the foundations recommendations should be reviewed as significant cuts or fill may affect the foundation recommendations. Areas with lower strength soil near the surface may require a lower design bearing pressure or soil improvement if significant fills are planned.

The recommendations presented in this report include assumptions related to the project design because detailed design information has not been developed. When additional design information is known, the recommendations presented in this report should be reviewed as information such as structural loads and changes in design elevations could impact the recommendations in this report.

4.2 SITE PREPARATION

Site preparation should start with removal of any trees/bushes and vegetation, as well as surficial debris or other deleterious material (if present), organic soils and topsoil. Any additional unsuitable soil/materials exposed such as buried topsoil (if encountered), excessive vegetation roots, deleterious material, soil that contains significant amounts of organics, or other unsuitable material should be removed in their entirety from the footprint of future building and pavement areas. Existing buildings and structures should be razed and completely removed to expose suitable native material. In addition, all unused utilities (if present) should be properly removed or abandoned. Field drain tile (if present) should be properly removed or abandoned or redesigned/reconnected. Material removed from the project site should be disposed in accordance with all applicable federal, state, and local regulations. Soil should not be stockpiled near or adjacent to the excavations.

In building slab on grade area and pavement areas, after the initial site preparation described above, we recommend recompacting the exposed material. Any areas of significant deflection during re-

compaction may be disked, dried, and re-compacted if weather permits, or removed and replaced with engineered fill. After re-compaction, before any initial fill lifts are placed, and before base material is placed, a proof roll is recommended with a minimum 20-ton tri-axle dump truck, or like machinery imparting similar static loading on the soil and moving at no more than walking speed. A geotechnical engineer or their designated representative should be present during the proof roll in order to identify soft or unstable areas, if any, and subsequently recommend remediation procedures. Where soil correction is needed, the options for improvement include the methods described in the following paragraphs.

Recondition the subgrade through moisture/density control:

If this option is chosen, the upper 12-inches of subgrade should be aerated through disking and dried to within two (2) percent of its optimum moisture content. After which, the dried soils can be re-compacted in place to at least 95% of the maximum modified Proctor dry density (ASTM D1557). However, this method may not be effective if lower strength soils extend to depths greater than 1 foot below grade.

Removal and replacement:

The soft or unstable subgrade soils should be removed and the excavated subgrade material replaced with suitable engineered fill or well graded granular fill. The new fill should be compacted to at least 95% of the maximum dry density as obtained by the maximum modified Proctor dry density (ASTM D1557). To potentially reduce the amount of subgrade excavation, geogrid with appropriate granular fill may be used in the excavation correction.

Chemical Stabilization

The soft or unstable clayey (lean clay or clayey sand) or silty soil can also be stabilized with cement or fly ash. Lime stabilization may be considered for clay soil. Chemical stabilization is typically more cost effective if performed over large areas in a single mobilization. In the case of soil stabilization, a proper mix design should be performed prior to the performance of any soil modification as the variability of the soil may limit the effectiveness of soil modification. GESTRA did not perform a mix design as it was not part of our scope of services.

The type of improvement and the depth of correction needed should be determined at the time of construction based on drainage, weather, and soil conditions. If the project construction schedule does not allow for adequate time to rework site subgrade soils, excavation and replacement will likely be required or alternate site preparations could be considered such as chemical stabilization or utilizing geotextile fabric or geogrid and granular fill to provide a stable pavement subgrade. The native clay soils encountered below the topsoil in the majority of the borings were observed with high moisture content (20% or more) which is an indication of potentially unstable subgrade conditions.

As a general rule for new fill placement, the lift thickness should not exceed 12 inches for granular soils and 9 inches for cohesive soil and the maximum particle size should be limited to 25% of the lift thickness. For typical earthwork, new engineered fill placed within the building pad or in the pavement subgrade/base course should be compacted to a minimum of 95% of the modified Proctor maximum dry density value. Alternate compaction may be required where new fill is around 10 feet (or greater) as clayey fill have a greater potential to consolidate post compaction. Structural soil fill should be placed a minimum of five feet beyond the edges of the new building and pavement areas, and an additional foot horizontally for each vertical foot of new fill to be

placed to provide adequate lateral confinement. The inorganic site soils free of any deleterious material and debris that would be removed from excavations could be reused as structural fill; however, moisture conditioning of the material may be necessary and sorting of unsuitable soils from existing material may be required before it is placed as engineered fill.

Site grading should direct runoff away from planned pavement areas and should be maintained throughout construction so that the potential for the softening of the subgrade soils is reduced. Equipment and working traffic should also be kept to a minimum on subgrade surfaces, especially during times of precipitation or following spring thaw. The contractor is responsible for maintaining completed earthwork areas. Consideration should be given to installing construction roads to reduce disturbance to the subgrade soils.

The information presented in this report may be used to evaluate the site conditions for construction, but the contractor is responsible for determining site preparation means and methods required to complete the project. An aggressive construction schedule or construction during seasons with limited drying time may not allow for reconditioning of the subgrade and soil correction may require removal and replacement with imported granular fill or use of chemical stabilization.

This geotechnical report identifies or recommends material that may be used as engineered fill, but the contractor is responsible for utilizing materials that meet the project requirements and determining means and methods required for placement and compaction. Typically, clay soils are easier to dry or rework when placed over large open areas during favorable weather conditions. Clay soils can be difficult to compact or moisture condition in trench backfill situations and may increase potential for consolidation and settlement of the backfill if it is not placed or compacted properly. Granular soils may be easier to place and compact in trench backfill situations but may increase construction costs if the material has to be imported.

4.3 FOUNDATION RECOMMENDATIONS

Due to variable existing terrain, the foundations will be dependent on the final grading plan and earthwork performed during the mass grading work. The following section is provided as a general discussion for building foundation design for preliminary design purposes. The most economical foundation should consider the actual structural loads, design elevations, and building design requirements. Modifications may be required for individual buildings depending on actual design information, including building location, grades and structural loads. Soil borings were not performed at each planned building location and future building owners may want to consider performing a geotechnical exploration specific to an individual building.

Based on the conditions encountered, a typical shallow spread/strip footing system designed for an allowable bearing capacity of 1,500 psf to 2,000 psf can be considered for the proposed buildings. Spread foundations designed for a maximum net allowable soil bearing capacity of up to 2,000 psf should be supported by the medium dense native granular soil, native clay soil with a minimum unconfined compressive strength (Qp) of 1 tsf or new engineered fill placed over suitable native soil.

Layers of lower strength soil were noted that may require correction at some boring locations such as B-1, B-5, B-7, B-11, B-13, B-16, B-20, B-24, B-26, B-32, B-33, and B-38. However, the impact of these layers on future construction will in part depend on future design elevations.

Bedrock depth was variable across the project site. If bedrock is present at or near a building

foundation bearing elevation, the building should be designed such that the foundations bear entirely on bedrock or suitable soil/engineered fill to avoid potential for differential settlement.

Where unsuitable soils are encountered at the foundation elevation, soil correction should consist of additional excavation to remove the unsuitable soils. If the over-excavation is being filled with engineered fill, we recommend the over-excavation be widened at a minimum 1H:1V ratio from the edge of the foundation. The over-excavation can then be filled to grade with suitable engineered fill placed in lifts not exceeding 12 inches and compacted to at least 95% of maximum dry density as determined by the modified Proctor (ASTM D1557). Alternatively, lean concrete with a minimum compressive strength of 500 psi could be used to fill the over-excavation to grade and lateral over-excavation will not be required.

The depth of excavation required to expose suitable bearing material may vary in areas not explored by GESTRA; therefore, we recommend the foundation excavations be reviewed by a geotechnical engineer or their designated representative to determine when soils suitable to support the recommended bearing capacity are observed.

The shallow foundation design should incorporate a minimum strip footing width of 18 inches and column pad width of 24 inches, even if the allowable bearing capacity has not been fully utilized. All perimeter foundations should meet code depth requirements and are recommended to bear a minimum of 48 inches below grade for heated structures and 60 inches for unheated structures in order to protect the structure from frost heave. Interior foundations in heated buildings may bear at a shallower depth provided the bearing soils will not freeze. If the structure includes load bearing thickened slabs, subgrade preparation under the thickened slabs should follow the recommendations in this report for foundations. We recommend that foundations also be suitably reinforced in order to compensate for the effects of minor differential movements due to subsurface soil variations.

4.4 FLOOR SLAB RECOMMENDATIONS

The subgrade material evaluated and prepared according to the recommendations in this report should be suitable to support slab on grade concrete. We recommend that a subgrade reaction modulus of 125 pounds per square inch per inch of deflection (pci) be used in the design of the floor slab at grade. The modulus value was assumed based on clay and/ or sand soil as the subgrade soil, assumes a 1-foot plate is used to determine the modulus and should be adjusted for the size of the foundation and confinement effect. We recommend that the floor slabs be suitably reinforced and designed to be separate from the foundation system in order to allow for separate movements. It is recommended the structural engineer specify the floor slab thickness, reinforcing, joint details and other parameters. At a minimum, the floor slabs are recommended to be reinforced or the concrete contain an appropriate fiber mesh additive to help control shrinkage cracking.

We recommend the installation of a capillary moisture break directly below the slab. A typical capillary moisture break may consist of at least 6 inches of sand or gravel with a maximum particle size of 1-1/2 inches, containing 15-55% passing the number 4 sieve and no more than 12% passing the number 200 sieve (fines) and should follow the recommendations of ACI 302.1R-15, Chapter 6. The structural engineer, architect, or manufacturer of a floor covering should determine the need of a vapor retarder, specify the vapor retarder location, and consider the concrete curing and the effects of moisture on future flooring materials or building end use. The vapor retarder should include proper sealing at penetrations, overlap at joints, and sealing at the interface of the wall and slab and may require an adequate cushion material to prevent damage.

Given the presence of groundwater encountered in our exploration, it may be necessary to address groundwater issues in the design of a below grade slab for some structures. In these cases, a groundwater management system is recommended to maintain water level below the slab system for the serviceability of the proposed structure. This may be accomplished by installing an underslab drainage system incorporated with the recommendations for below grade wall drainage presented in this report. We recommend including cleanouts for the system in the event the subsurface drainage system becomes blocked or fails and is unable to remove the water from under the slab. A mechanical engineer should design the pumping and disposal of the water from the underslab drain and the perimeter drain system and the spacing of the cleanouts should be determined in conjunction with the structural engineer. We recommend including a redundant sump and pump system in the event larger groundwater events occur and evaluate if the system should include a backup power system. Further details for underslab drainage design will depend on the individual structure and subsurface conditions.

4.5 LATERAL EARTH PRESSURES

It is our understanding that some buildings will be designed with a below grade. Below grade walls will need to be designed to resist lateral earth pressures. The values presented in Table 4-1 assume that the walls are vertical; that a clean, free-draining granular fill is used as backfill within 2 feet behind the wall; the backfill condition at the ground surface is level; and that adequate drainage is provided to prevent the buildup of any hydrostatic pressure. In addition, the below grade walls will also be required to resist the surcharge of traffic that may occur during or after construction.

Table 4-1: Below-Grade Wall Design Parameters

Below-Grade Wall Design Parameters [a]	
Total Unit Weight of Backfill (γ)	125 pcf
Angle of Internal Friction (Φ)	26º
At-Rest Earth Pressure Coefficient, (K_o)	0.56
Active Earth Pressure Coefficient, (K_a)	0.39
Passive Earth Pressure Coefficient, (K_p)	2.56

a - Based on lean clay soil encountered

For walls that are free to rotate at least 0.001 times the height of the wall, such as a temporary earth retention system and retaining walls, then an active earth pressure condition will develop. Equivalent fluid densities can be calculated by multiplying unit weight by the listed pressure coefficients at different conditions. For passive resistance, we recommend using a minimum factor of safety of 2.0 in passive earth pressure calculations because of the large strains required to mobilize the full passive resistance, ignoring the upper 1 foot of soil in frost protected areas and ignoring the soil within the frost depth for other areas.

Drainage should be provided behind below-grade and retaining walls to prevent the buildup of hydrostatic pressures. We recommend that free-draining granular drainage aggregate be placed

within 2 feet behind the back face of the walls. Drainage pipes are recommended to be installed behind the walls and be drained by gravity or a sump pit and pump system. The drainage pipes should be surrounded by a minimum of 6 inches of drainage aggregate. Due to the native soils containing a significant percentage of fine material, the drainage aggregate should be completely wrapped in a non-woven, high survivability, geotextile fabric with an apparent opening size (AOS) in the range of 70 to 100. The geotextile fabric should prevent migration of any adjacent soil into the drainage aggregate. We do not recommend using a drainage pipe that includes a geotextile sleeve in immediate contact with the pipe.

We recommend a relatively impermeable barrier that may consist of a minimum 2 foot thick clay cap or Bituminous or Portland cement concrete (i.e. walkways and drives) be placed around each of the below-grade structures to minimize surface water infiltration into the backfill against the walls. The clay material, if used, should be placed and compacted as recommended in this report and should extend from final grade to a depth of at least 2 feet. The clay cap or impermeable barrier should slope away from the structure at a minimum 2 percent grade. Surcharge loads, including those from adjacent (present and future) structures, as well as temporary construction equipment, within a zone defined by a plane extending at a 45 degree angle above the base of the wall should also be included in the design. The size of the compactor used behind the wall and requirements before backfilling should be confirmed by the structural engineer.

Given the presence of groundwater encountered in our exploration, it may be necessary to address groundwater issues in the below grade wall drainage system for some structures. In these cases, a groundwater management system and water proofing are recommended and may require incorporation of an underslab drainage system. We recommend including cleanouts for any drainage system in the event the subsurface drainage system becomes blocked or fails and is unable to remove the water from under the slab. A mechanical engineer should design the pumping and disposal of the water from the drainage system. We recommend including a redundant sump and pump system in the event larger groundwater events occur and evaluate if the system should include a backup power system. Further details for drainage design will depend on the individual structure and subsurface conditions.

4.6 SEISMIC SITE CLASSIFICATION

Section 1613 of the International Building Code 2015 (IBC) was used to assign a soil site classification. Based on the native soil conditions observed and assuming these are consistent or better to a depth of 100 feet, the soil site classification **D** (stiff soil) may be used in the structural design of the proposed buildings. Based on site class D, and mapped spectral response acceleration S_s and S_1 for Delafield, Wisconsin, the site coefficient F_a and F_v are 1.6 and 2.4, respectively. Portions of the site may be eligible for a soil site classification C (very dense soil and soft rock), but individual structures should be evaluated on a project by project basis.

4.7 PAVEMENT RECOMMENDATIONS

The pavement subgrade soil should be prepared and proof rolled following the recommendations in this report. Our recommendations below assume the subgrade conditions are consistent with the results of our subsurface testing evaluation and that the subgrade is thoroughly prepared for construction based on the recommendations developed in this report and pass a thorough proof roll prior to base material placement. As previously noted, the native clay soils encountered below the topsoil in the majority of the borings were observed with high moisture content (20% or more) which is an indication of potentially unstable subgrade conditions. Additional corrective action

should be determined at the time of construction for areas where it is necessary to provide a more consistent subgrade. Alternatively the project could consider a subgrade stabilization or a geogrid and granular stabilization layer as part of the design.

The Wisconsin Asphalt Pavement Association (WAPA) Asphalt Pavement Design Guide, AASHTO 2021, and the results of the geotechnical evaluation were used to provide the recommendations for the new asphalt pavement. Based on clayey soils or clayey sand as the subgrade soil, GESTRA recommends that "poor soils" (estimated CBR value between 2 and 5, SSV = 2.5) conditions should be assumed as the subgrade soils. Table 4-2 below presents the recommended hot mix asphalt and base course thicknesses for planned roadways. Pavement sections may be modified if the traffic volumes are different than presented below and should be confirmed with the requirements of the local municipality.

Base course material should be placed at moisture content within 2% of optimum and compacted to a minimum of 95% of maximum dry density as determined by the modified Proctor. Hot Mix Asphalt (HMA) should be placed and compacted following the guidelines of WisDOT Standard Specifications for Highway and Structure Construction, section 460.3.

Table 4-2: Pavement Design Recommendations

Traffic Class	Pavement Layer Type	Thickness (inches)	Material Type	WisDOT Specifications
Traffic Class II, (subdivision streets, 20-year ESALs < 1 million) [a]	Hot Mix Asphalt	4.5	LT	Section 460
	Base Course (Dense Graded)	12.0	1-1/4 inch Crushed Stone	Section 305

a- Based on Table 7.2 of WAPA Asphalt Pavement Design Guide.

One of the important considerations in designing a high quality and durable pavement is providing adequate drainage. Drainage design for the proposed pavement section is out of GESTRA's scope for this project. It is important that bird baths (leeching basins) and surface waves are not created during construction of the HMA layer. A proper slope should be allowed and drainage should be provided along the edges of pavements and catch basins to prevent the accumulation of free water within the base course, which otherwise may result in subgrade softening or swelling, and pavement deterioration under exposure and repeated traffic conditions.

Pavement sections presented in the above table should not be used for areas which experience repeated truck traffic, equipment or truck parking areas, entrances and exit aprons, or contain trash dumpster loading zones. In the areas listed above, a Portland Cement Concrete (PCC) pavement should be used. The PCC layer thickness is recommended to be 6.0 inches, with a minimum of 6.0 inch-thick crushed stone base course, but may be modified depending on the final design. The reinforcement details for PCC layers should be designed by the project design engineer as the project conditions dictate.

All pavements require regular maintenance and repair in order to maintain the serviceability of the pavement. These repairs and maintenance are due to normal wear and tear of the pavement surface and are required in order to extend the serviceability life of the pavement. However, after 20 years

of service, a normal pavement structure is likely to deteriorate to a point where pavement rehabilitation may be required to maintain the serviceability.

4.8 STORMWATER FEATURES

Multiple stormwater features are planned for the project which include detention ponds and bioinfiltration basins. Trio provided a summary of the preliminary stormwater plan which generally included normal water elevation for detention ponds and bottom of basin elevations for bioinfiltration basins. For the purpose of our analyses, we assumed the bottom of wet retention stormwater ponds at 5 feet below normal water level as provided by Trio. Within this report, the bottom of basin elevation identified is termed the native soil interface. At this time, design details are not finalized, so we have provided a summary of the elevations, conditions and comments related to infiltration and retention at each boring location and separated the summary by the different zones of the development.

The samples collected from the borings were evaluated for the stormwater features, and the WDNR Soil and Site Evaluation-Storm forms are included in Appendix I. The texture of the samples collected was identified visually. The stratification lines between the soil types were identified based on the available data. The actual in-situ changes between layers may differ slightly and may be more gradual than depicted on the evaluation form. Subsurface and groundwater conditions can vary in areas not explored by GESTRA. Infiltration rates for the observed soil textures were estimated based on the information provided in WDNR Technical Standard 1002, Table 2 (dated December 2022), and are presented in the Soil and Site Evaluation-Storm forms attached in Appendix I (separated by existing parcels).

In the following tables we have provided details for the individual stormwater features planned and evaluated each for wet retention and infiltration regardless of the current plan. Within each table we have provided comments related to a wet retention pond liner and infiltration. The information presented in this report should be reviewed in conjunction with the attached boring logs and Soil Evaluation-Storm forms. Typically, the comments will fall under the following conditions.

- Liner required:

GESTRA evaluated the native soil conditions following the general guidelines of the WDNR Conservation Practice Standard 1001 for the design of Wet Detention Ponds. The existing native soil conditions were compared to Appendix D (Liner Flow Chart for Wet Detention Ponds) to determine if a liner is required. At locations where *sandy clay, silty clay or clay* were not present to at least 3 feet below the native soil interface or if bedrock (possible bedrock/auger refusal) was within 2 feet or above the native soil interface, the location is recommended for a constructed liner.

- Not suitable for infiltration:

GESTRA evaluated the native soil conditions following the general guidelines of NR 151.124(4)(c) and Wisconsin Department of Natural Resources (WDNR) Conservation Standard Practice 1002. Locations were noted as eligible for exemption from infiltration where *sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, or clay* was present at the native soil interface. Locations where bedrock (possible bedrock/auger refusal) or groundwater was less than 3 feet from native soil interface were also noted as not suitable for infiltration as adequate separation and filtering layer would not be present.

Additional exploration through test pits and further laboratory testing is required if a basin will be designed for infiltration per WDNR Conservation Standard Practice 1002. When final design elevations are determined, additional evaluation of infiltration device is also recommended to establish if the soil meets the filtering layer requirements if the bottom of the pond will be within 3 feet of the bedrock or groundwater levels encountered. NR 151 requires the soil between the bottom of the infiltration system and seasonal high groundwater have at least a 3-foot layer of soil with 20% fines or greater or a 5-foot soil layer with 10% fines or greater. Per WDNR CPS 1002, *sandy loams, loams, silt loams, silts and all clay textural classifications* are assumed to meet the percent fines limitations of a filtering layer.

Zone 1 – northwest quadrant

Pond 13P – Wet Retention

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-36 [a]	900.7	890.3	885.2	896.7	Liner required. Silt loam at native soil interface. Not suitable for infiltration. Groundwater above native soil interface.
B-37	899.3		881.8	893.8	Liner required. Sandy clay loam at native soil interface. Not suitable for infiltration. Groundwater above native soil interface and soil eligible for infiltration exemption.

Notes: a – B-36 offset as directed by Trio. Staked location in wooded area and not accessible.

Zone 2 – northeast quadrant

Pond 9P – Wet Retention

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-1	899.7	893	887.2	895.7	Liner required. Sandy clay loam at native soil interface. Not suitable for infiltration. Groundwater above native soil interface and soil eligible for infiltration exemption.
B-2	906.9		898.4	901.9	Liner required. Possible bedrock above native soil interface. Not suitable for infiltration. Groundwater and possible bedrock above native soil interface.

Basin 10B – Bioinfiltration

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-3	915.6	912	905.6	Not encountered	Liner required. Sand at native soil interface. Suitable for infiltration. Possible additional evaluation of filtering layer, sand at native soil interface.
B-4	919.8		910.3	Not encountered	Liner required. Silt loam at native soil interface. Not suitable for infiltration. Possible bedrock within 2 feet of native soil interface.

Pond 11P – Wet Retention

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-5	917.7	907.2	911.2	Not encountered	Liner required. Possible bedrock above native soil interface. Not suitable for infiltration. Possible bedrock higher than native soil interface.
B-6	912.4		898.9	Not encountered	Liner potentially required. Sandy clay loam at native soil interface. At native soil interface, soil eligible for infiltration exemption.

Basin 8B – Dry Pond

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-8	918.7	916.5	912.2	NMR	Liner potentially required. Sand clay loam at native soil interface. At native soil interface, soil eligible for infiltration exemption.
B-9	919.2		910.2	NMR	Liner potentially required. Clay at native soil interface but does not extend 3 feet. At native soil interface, soil eligible for infiltration exemption.

Notes: NMR = no measurement recorded. B-8, B-9, predominately clayey soils to depth of boring.

Zone 3 – southwest quadrant

Pond 3P – Wet Retention

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-33	924.1	917	907.1	922.1	Liner required. Sandy loam at native soil interface. Not suitable for infiltration. Groundwater above native soil interface.
B-34	929.6		918.6	926.6	Liner required. Groundwater and possible bedrock above native soil interface. Not suitable for infiltration. Possible bedrock above native soil interface.

Notes: Groundwater elevation is extended reading. At completion of drilling groundwater at 920.6 feet in B-33 and 921.6 feet in B-34 which are also higher than plan native soil interface.

Pond 1B – Wet Retention

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-26	938.3	933.5	922.3	933.3	Liner potentially required. Silty clay loam at native soil interface. Not suitable for infiltration. Groundwater within 1-foot of native soil interface. Eligible for infiltration exemption.
B-27	939		924.0	929	Liner potentially required. Silty clay loam at native soil interface. Eligible for infiltration exemption.

Notes: Groundwater elevation is extended reading, At completion of drilling groundwater at 927.3 feet in B-26. Extended water level reading used in our evaluation.

Pond 2B – Wet Retention

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-25	932.6	931	920.6	925.6	Liner potentially required. Clay loam at native soil interface. Eligible for infiltration exemption. Additional excavation required to expose non-exempt material.

Basin 4B – Bioinfiltration

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-29	946.1	936	926.1	933.1	Liner required. Sand at native soil interface. Suitable for infiltration. May require filtering layer.
B-30	948.5		935.5	Not encountered	Liner required. Sand at native soil interface. Possible bedrock within 1 foot of native soil interface. Not suitable for infiltration. Possible bedrock within 1 foot of native soil interface.

Zone 4 – southeast quadrant

Pond 12P – Wet Retention

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-17	925.0	917	916.5	917.0	Liner required. Loamy sand at native soil interface. Possible bedrock within 1 foot of native soil interface. Not suitable for infiltration. Possible bedrock within 1 foot of native soil interface.
B-18	931.2		924.7	Not encountered	Liner required. Possible bedrock above native soil interface. Not suitable for infiltration. Possible bedrock above native soil interface.

Pond 7P – Wet Retention

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-13	921.7	919.3	917.2	Not encountered	Liner required. Sandy clay loam at native soil interface. Possible bedrock within 3 feet of native soil interface. Not suitable for infiltration. Possible bedrock within 3 feet of native soil interface.
B-14	925.2		917.7	Not encountered	Liner required. Loamy sand and sandy clay loam at native soil interface. Possible bedrock within 2 feet of native soil interface. Not suitable for infiltration. Possible bedrock within 2 feet of native soil interface.

Pond 6P – Wet Retention

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-21	917.7	905	913.2	Not encountered	Liner required. Possible bedrock above native soil interface. Not suitable for infiltration. Possible bedrock above native soil interface.
B-22	916.3		908.3	Not encountered	Liner required. Possible bedrock above native soil interface. Not suitable for infiltration. Possible bedrock above native soil interface.

Rain Garden 5B

Boring Location	Existing Ground Elevation	Plan Native Soil Interface Elevation	Bedrock Elev. (feet)	Groundwater Elev. (feet)	Comments
B-20	925.6	922	919.1	Not encountered	Liner may not be required. Silty clay at native soil interface, but possible bedrock within 3 feet of native soil interface. At native soil interface, soil eligible for infiltration exemption. Not suitable for infiltration. Possible bedrock within 3 feet of native soil interface.

The following recommendations are for the construction of a storm water basin as a wet detention pond and are in part developed based on the information available in the Wisconsin Department of Safety and Professional Services Chapter SPS 382.365 and 360.30 and Appendix D of Technical Standard 1001. At this time the design requirements are not known and our recommendations are based on an assumed Type A liner.

For an assumed Type A liner, as a minimum the base, sides and berms at elevations below the design high-water level should be constructed out of clay soils with the following properties:

- an average plasticity index (PI) of 12 or more with none less than 10,
- an average liquid limit (LL) of 25 or greater with none less than 20,
- a minimum of 50% of the soil by weight finer than the #200 sieve,
- a minimum of 90% of the soil by weight finer than the #4 sieve, and
- in-place hydraulic conductivity of the compacted soils should be 1x10-7 cm/sec or less.

The fine-grained cohesive soils encountered in the borings that meet the above requirements will require sifting and sorting of the soil to remove large gravel, cobbles and boulders before placing it as liner material. Otherwise, the project should consider importing suitable clayey soil for the liner construction. A complete testing program of the proposed liner material should be performed to confirm it meets the project requirements before and after placement. The native soil encountered near the pond bottom elevation typically included gravel, cobbles and boulders.

Alternatively, a high density polyethylene (HDPE) or geosynthetic clay liner (GCL) could be considered in lieu of the installation of a clay liner. Another option would be constructing the liner using a soil-bentonite clay mix, but this system typically requires design and construction by a specialty contractor. Refer to Appendix D of Technical Standard 1001 for additional information related to the clay liner and these alternative liners.

The clay liner soils should be compacted using a sheepsfoot (or similar type) compactor to a minimum of 90% of the modified Proctor dry density value and at a moisture content at least 2% wet of optimum as determined by ASTM D1557. This material should be compacted in maximum 6-inch loose lifts and the compacted clay should be free of organics, cobbles, boulders, debris and any other unsuitable soils. The clay shall be disked or otherwise mechanically processed before compaction to break up clods so that the maximum clod size is 4 inches. The resulting clay liner should have a minimum thickness of 2 feet. Refer to NRCS Wisconsin Construction Specification 300 – Clay Liners for additional information pertaining to the placement and compaction of clay liner material.

Additional quality assurance testing is recommended during construction to confirm the material being placed meets the project requirements, including testing the clay liner materials for hydraulic conductivity and material properties. Regardless of the liner system selected, we recommend it be installed by a company with demonstrated prior experience with the product.

4.9 CONSTRUCTION CONSIDERATIONS

The detailed means and method of excavation and construction should be decided by the contractor and approved by the project design team. Based on the specific site information, geotechnical exploration results and requirements for the proposed structure, the following issues should be taken into consideration during construction.

Dewatering

For shallow excavations, substantial water is not anticipated to be encountered during excavation. If water is encountered during shallow excavations, we anticipate the appropriate number of temporary sump pits and pumps should be sufficient to remove anticipated volume of water in the excavation. The contractor should be prepared to control groundwater and surface water and prevent it from accumulating in excavations or otherwise affecting construction.

Multiple borings encountered water at depths of 10 feet or less. Therefore, water should be anticipated during excavation in these areas and may be present in other areas not explored. Perched or trapped water may also be encountered. Where excavations below water are anticipated, the contractor should be prepared to install a construction dewatering system and we recommend the water level during construction should be kept a minimum of 2 feet below the deepest excavation during construction and until the final structure below grade drainage system is operating. A specialty dewatering contractor should be consulted for appropriate dewatering methods during construction as well as to evaluate potential impact on the proposed construction and surrounding structures. If the dewatering system is not properly designed, a boiling and/or heaving subgrade could occur possibly resulting in loss of ground support and detrimental effect to the nearby existing structures. Further exploration and evaluation of the groundwater is recommended when final design elevations are established.

Excavation Stability

Caving is a common issue for excavation side walls during construction, especially if fill material, granular soils, and/or water seepage are observed. An excavation plan should be developed and the length of excavation left open should be limited to prevent caving soil from covering the suitable bearing soils.

A temporary soil retention system may also be necessary in order to prevent caving or provide support of surrounding structures or utilities during construction. Providing recommendations or designing the retention system is out of the scope of services for GESTRA. The contractor must comply with the federal, state, local and updated OSHA regulations during excavation and in retention system design to ensure excavation safety.

Occupational Safety and Health Act (OSHA) has instituted strict standards for temporary construction excavations. These standards are outlined in 29 CFR Part 1926 Subpart P. Excavations within unstable soil conditions or extending five feet or more in depth should be adequately sloped or braced according to these standards. Excavation safety is the responsibility of the contractor. Material stockpiles or heavy equipment should not be placed near the edge of the excavation slopes. The actual stable slope angle should be determined during construction and will depend upon the loading, soil, and groundwater conditions encountered.

Weather Implications

The subgrade soil or the soil at foundation level might become unstable with exposure to adverse weather such as rain, snow and freezing temperatures. The unstable areas due to weather exposure may require an additional undercut or stabilization and the representative geotechnical engineer should assist with the determination of the depth of additional undercut or stabilization procedure based on observation of the field condition.

Soil Sensitivity

Soil at the construction site will be exposed to moisture and disturbance from construction traffic, construction equipment and human factors. Due to the disturbance, soil may become sensitive with contact of water. Contractor should try to lessen the exposure the soil at the construction site may encounter to moisture and disturbances. Therefore, the foundations, floor slabs and pavements should be constructed immediately after the review of the representative geotechnical engineer.

5.0 EXPLORATION AND TESTING PROCEDURES

5.1 LAYOUT AND ELEVATION PROCEDURES

A total of thirty-nine (39) soil borings were completed at the approximate locations shown on the attached Borehole Location Map in Appendix I. The location of the borings were selected, located in the field, and ground surface elevation provided by Trio (project civil engineer). One boring location B-36 was in a wooded area and inaccessible. GESTRA adjusted the location per the direction of Trio and noted the offset location and ground elevation.

5.2 FIELD TESTING PROCEDURES

The boreholes were drilled using a track mounted drill rig. The boreholes were initiated and advanced by using hollow stem augers. 24-inch split spoon samples were collected continuously to the depth of the boring. Borings were planned to be drilled to a maximum depth of 20 feet, but were terminated at auger refusal shallower than planned depth.

All representative soil samples were taken in general accordance with the "Standard Method for Penetration Test and Split-Barrel Sampling of Soils" (ASTM D1586). After each sampling, a soil sample was retained and placed in a jar and recorded for type, color, consistency, and moisture, sealed and then transported to the laboratory for further review and testing, if required. The specific drilling method used including the depths, rig type, crew chief, are included on each of the individual boring logs as it may change for each borehole.

5.3 LABORATORY TESTING PROCEDURES

After completion of drilling operations, all of the retained soil samples were transported to GESTRA's laboratory and classified by a geotechnical engineer using the Unified Soil Classification System (USCS) and the Field Book for Describing and Sampling Soils, USDA, NRCS, 2012. Charts describing the classification systems used are included in Appendix I of this report. The engineer assigned laboratory testing suited to extract important index properties of the soil layers. These tests included hand penetrometer, moisture content, mechanical analysis, hydrometers, and Atterberg limits.

STANDARD OF CARE

Our exploration was limited to evaluating subsurface soil and groundwater conditions pertaining to the proposed project. GESTRA did not perform any environmental, chemical, or hydrogeologic testing as these were not part of our work scope.

This report should be made available in its entirety to bidding contractors for information purposes. The soil boring logs and borehole location map should not be detached from this report. Our report is not valid if used for purposes other than what is described in the report.

All OSHA regulations such as those regarding proper sloping and temporary shoring of excavations should be followed during the entire construction process.

GESTRA has presented our professional opinions in this report in the form of recommendations. Our opinions are based on our understanding of current project information and related accepted engineering practices at the time of this report. Other than this, no warranty is implied or intended.

Sincerely,

GESTRA Engineering, Inc.

Report Prepared By:

Douglas Dettmers

Digitally signed by Douglas Dettmers
Date: 2023.05.16 11:06:29 -05'00'

Douglas Dettmers, P.E.
Senior Engineer

Report Reviewed By:

Eric Jeske

Digitally signed by Eric Jeske
Date: 2023.05.16 11:06:58 -05'00'

Eric Jeske, P.E.
Senior Engineer

APPENDIX I

SITE LOCATION MAP, BOREHOLE LOCATION MAP, TEST BORING LOGS, SOIL EVALUATION-STORM FORMS, GENERAL NOTES AND SOILS CLASSIFICATION

= Project Area

Base map obtained from Waukesha County GIS website

GESTRA Engineering, Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: (414) 933-7444
Fax: (414) 933-7844

Project Name & Location:
Thomas Farm Development
NWC Golf Road and Elmhurst Road
Town of Delafield, Wisconsin

Drawing Title:
Site Location Map

Project No.: 23083-10

Scale: Not to Scale

Drawing No.: 1 of 2

Prepared by: JM

Checked by: DD

Date: May 6th, 2023

ATER REPORT:
O THE PRELIMINARY
VATER PLAN REPORT ADDITIONAL
AND CALCULATIONS

ATER PLAN NOTES:
POSED DEVELOPMENT (ALL PHASES) ARE SERVED
TE SHARED STORMWATER FACILITIES, AS SHOWN
RELIMINARY STORMWATER PLAN.
RMWATER FACILITIES WILL BE CONSTRUCTED WITH
RRESPONDING PHASE OF DEVELOPMENT.
RMWATER FACILITIES WILL BE LOCATED WITHIN
AND/OR DRAINAGE EASEMENTS.
DENTIAL LOTS AND CONDOMINIUM UNITS WILL BE
A MASTER HOMEOWNERS ASSOCIATION.
TER HOMEOWNERS ASSOCIATION WILL BE
SIBLE FOR THE REPAIR, MAINTENANCE AND
TION OF THE STORMWATER PRACTICES.

= Zone Boundary

= Borehole Location

GESTRA

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191 W Edgerton Avenue
Milwaukee, WI 53207
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Fax: (414) 933-7844

Project No.: 23083-10

Project Name & Location:
Thomas Farms Development
NWC Golf Road and Elmhurst Road
Town of Delafield, Wisconsin

Drawing Title:
Borehole Location Map

Date: May 6th, 2023

Prepared by: JM

Checked by: DD

Drawing No.: 2 of 2

Scale: 1 inch = 300 feet

Base Map obtained from "Map 5 - Preliminary Stormwater Plan" dated 04/07/2023 provided to GESTRA
Document Size = 11"x17"

DISCHARGE POINT
DISCHARGE POINT
OAKTON RD
Lake Country Recreation Trail
Zone 1
Zone 2
Zone 3
Zone 4
13P POND
Top = 899.8
Spillway = 898.8
NWL = 895.3
11P POND
Top = 917.5
Spillway = 916.5
NWL = 912.2
POND 2B
(1' DEPTH)
Top = 933
Spillway = 932
Bot = 931
POND 3P
Top = 929
Spillway = 928
NWL = 922
1B POND
Top = 938.5
Spillway = 937.5
NWL/Bot = 933.5
12P POND
Top = 927
Spillway = 926
NWL = 922
BIOFILTER 10B
Top = 916
Spillway = 915
Bottom = 912
POND 9P
Top = 904
Spillway = 903
NWL = 898
DRY POND 8B
Top = 920.5
Spillway = 919.5
Bottom = 916.5
POND 7P
Top = 923.3
Spillway = 922.3
NWL/Bot = 919.3
POND 6P
Top = 916
Spillway = 915
NWL = 910
4B
Top = 940
Spillway = 939
Bottom = 936
5B RAIN GARDEN
Top = 926
Spillway = 925
Bottom = 922
B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14 B-15 B-16 B-17 B-18 B-19 B-20 B-21 B-22 B-23 B-24 B-25 B-26 B-27 B-28 B-29 B-30 B-31 B-32 B-33 B-34 B-35 B-36 B-37 B-38 B-39
EXISTING WETLAND
EXISTING PEC
100-YR SETBACK
ULTIMATE OVERFLOW
ENVIRONMENTAL CORRIDOR
SHORELAND ZONING
Landscape Berm
GLEN COVE ROAD
ELMHURST ROAD
CROOKED CREEK
PRAIRIE WOOD CT
HIDDEN CREEK CT
ROOKSTONE CIR
GOLF ROAD
CTH 'DR'
I-94
GOLF RDG
REGRAD
PROVIDE
DRAINAG
DISCHARGE POINT

p 5
ELIMINARY STORMWATER PLAN

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/10/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/10/2023	BORING NUMBER: B-1
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 389790 EASTING: 2415434	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 899.7 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	17	0 1 1 2	2		TOPSOIL (10-inches) 0.8 (898.9) LEAN CLAY WITH SAND, brown, moist, medium stiff 2 (897.7)	CL			.50			21.9	Driller noted standing water around boring.
SS - 2	18	2 2 4 4	6		CLAYEY SAND WITH GRAVEL, light brown at 3', trace gray mottling, moist, loose 3.8 (895.9)	SC			.50				Gravel = 21.3% Sand = 29.4% P200 =49.2%
SS - 3	12	4 6 4 4	10	5 895.0	CLAYEY SAND, light brown, wet, medium dense, trace gravel	SC							
SS - 4	14	5 5 9 6	14		8 (891.7)								
SS - 5	12	5 9 14 17	23	10 890.0	SILTY SAND WITH GRAVEL, light brown, moist to wet, medium dense 12.2 (887.5)	SM							
SS - 6	18	3 4 17 16	21										
SS - 7	2	50/2"	R		End of Boring at 12.2 ft.								Auger Refusal at 12.5'. Possible bedrock.
				15 885.0									
				20 880.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 6 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 4 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 2 HOURS: 4 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-2
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 389629 EASTING: 2415563	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 906.9 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	15	5 6 6 6	12	905.0	TOPSOIL (7-inches) 0.6 (906.3) LEAN CLAY, brown, moist, stiff, trace sand and gravel	CL			1.5	43	26	22.6	
SS - 2	12	3 7 8 5	15		2 (904.9) CLAYEY SAND WITH GRAVEL, light brown, very moist, medium dense	SC							
SS - 3	14	8 20 27 16	47	5	4 (902.9) SILTY CLAYEY SAND, light brown, moist to wet, medium dense to dense, gray gravel with sand layer around 5'	SC-SM							
SS - 4	12	3 8 7 38	15	900.0									
SS - 5	6	12 50/5"	R		8.9 (898) End of Boring at 8.9 ft.								Driller noted auger refusal at 8.5'. Possible bedrock.
				10									
				895.0									
				15									
				890.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 6 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 6 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 3 HOURS: 5 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development	DATE DRILLING STARTED: 4/7/2023	PAGE NUMBER: 1 of 1	
PROJECT LOCATION: Delafield, Wisconsin	DATE DRILLING ENDED: 4/7/2023	BORING NUMBER: B-3	
BORING DRILLED BY: FIRM: GESTRA, CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz	NORTHING: 389426	PROJECT NUMBER: 23083-10
	LAB LOG / QC: D. Dettmers	EASTING: 2415140	DRILLING RIG: Geoprobe
			DRILLING METHOD: 2¼" HSA
			SURFACE ELEVATION: 915.6 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	14	2 3 4 6	7	915.0	TOPSOIL (6-inches) 0.5 (915.1) LEAN CLAY, brown, moist, stiff, trace sand, gravelly (1'-2') 2 (913.6)	CL			1.50			26.2	
SS - 2	12	3 23 42 29	55		GRAVEL WITH SAND, light brown, moist, medium dense to very dense, sand with gravel layers, (Possible Weathered Bedrock) 3.6 in/hr but adjusted to 0.50 in/hr due to very dense characteristics top of engineered soil at basin 10 (elev 912.0)	GP							
SS - 3	10	21 14 12 14	26	5 910.0	bottom of basin 10 (elev 910.0)								
SS - 4	14	7 15 48 18	63										
SS - 5	14	18 50/3" 15 14	65/3		SS-5: with silt								
SS - 6	0	50/1"	R	10 905.0	10 (905.6) End of Boring at 10.0 ft.								Driller noted auger refusal at 10'. Possible bedrock.
				15 900.0									
				20 895.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER NE HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/7/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/7/2023	BORING NUMBER: B-4
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 389283 EASTING: 2415140	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 919.8 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	20	2 1 2 2	3			TOPSOIL (10-inches) 0.8 (919) LEAN CLAY, brown, moist, stiff, trace sand, with gravel at 3'	CL			1.75			22.1	
SS - 2	10	1 4 6 10	10			4 (915.8)				1.00			23.1	
SS - 3	10	25 31 28 15	59	5	915.0	SAND WITH SILT AND GRAVEL, light brown, moist, very dense, possible cobbles 6 (913.8)	SP-SM							
SS - 4	11	10 10 8 14	18			CLAYEY GRAVEL WITH SAND, light brown, moist, medium dense to very dense, sand with silt layers	GC							P200 = 32.5%
SS - 5	10	28 38 50/3	R			9.3 (910.5)								
				10	910.0	End of Boring at 9.3 ft.								Auger Refusal at 9.5'. Possible bedrock
				15	905.0									
				20	900.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER NE HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-5
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 389182 EASTING: 2414717	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 917.7 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	9	2 2 3 3	5		TOPSOIL (10-inches) 0.8 (916.9) CLAYEY SAND, light brown, moist, very loose to dense								
SS - 2	15	3 3 3 4	6	915.0		SC							
SS - 3	15	2 16 22 31	38	5 5 (912.7) GRAVEL WITH SAND AND SILT, brown and gray, moist, dense to very dense		GP-GM							
SS - 4	3	4 50/5"	R		6.9 (910.8) End of Boring at 6.9 ft.								Driller noted auger refusal at 6.5. Possible bedrock.
				910.0									
				10									
				905.0									
				15									
				900.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NE			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-6
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 389011 EASTING: 2414577	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 912.4 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	14	1 2 1 2	3		TOPSOIL (11-inches) 0.9 (911.5) LEAN CLAY, brown, moist, stiff	CL			1.0			20.1	
SS - 2	14	2 6 7 6	13	910.0	3 (909.4) CLAYEY SAND WITH GRAVEL, light brown, moist, medium dense to very dense, brown sand layer at 6'								Gravel = 25.0% Sand = 33.2% P200 =41.8%
SS - 3	16	4 16 9 4	25	5									
SS - 4	12	13 9 10 43	19	905.0									
SS - 5	13	16 15 14 12	29			SC-SM							
SS - 6	14	24 32 32 25	64	10									
SS - 7	18	64 55 60/2"	R	900.0	13.5 (898.9) End of Boring at 13.2 ft.								Driller noted auger refusal at 13.5'. Possible bedrock.
				15									
				895.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR		

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-7
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 388598 EASTING: 2414571	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 916.3 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	18	0 1 2 4	3	915.0	TOPSOIL (10-inches) 0.8 (915.5) LEAN CLAY, brown, moist, stiff, trace sand 2 (914.3)	CL			1.00			22.7	
SS - 2	14	0 2 3 2	5		LEAN CLAY WITH SAND, light brown, moist to very moist, medium stiff, trace gravel				0.50			12.3	
SS - 3	12	2 5 6 8	11	5 910.0		CL			0-0.25			9.2	
SS - 4	9	3 5 4 3	9		8 (908.3)				0-0.25			9	
SS - 5	14	8 30 50/3"	R		GRAVEL WITH SAND, brown and gray, wet, very dense 9.3 (907)	GP							
				10 905.0	End of Boring at 9.3 ft.								Driller noted auger refusal at 9.5'. Possible bedrock.
				15 900.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 7.5 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 3 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 3 HOURS: 0.4 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
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Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development	DATE DRILLING STARTED: 4/10/2023	PAGE NUMBER: 1 of 1	
PROJECT LOCATION: Delafield, Wisconsin	DATE DRILLING ENDED: 4/10/2023	BORING NUMBER: B-8	
BORING DRILLED BY: FIRM: GESTRA, CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin	NORTHING: 388826	PROJECT NUMBER: 23083-10
	LAB LOG / QC: D. Dettmers	EASTING: 2415086	DRILLING RIG: Geoprobe
			DRILLING METHOD: 2¼" HSA
			SURFACE ELEVATION: 918.7 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	16	2 2 2 2	4			TOPSOIL (10-inches) 0.8 (917.9)								
						SANDY LEAN CLAY, brown, moist, stiff				1.00	48	27	21.7	
						top of engineered soil at basin 8 (elev 916.5)								
SS - 2	13	2 2 3 2	5		915.0	0.04 in/hr	CL			1.00			27.6	P200 = 52.8%
						bottom of basin 8 (elev 915.5)								
SS - 3	12	1 1 2 50/5"	3	5									9.2	
						5.9 (912.8) Gravelly at 5.5'								
						End of Boring at 5.9 ft.								Auger Refusal at 6.5'. Possible bedrock.
					910.0									
				10										
					905.0									
				15										
					900.0									
				20										

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NMR ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NMR	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR		

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
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Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/10/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/10/2023	BORING NUMBER: B-9
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 388693 EASTING: 2415182	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 919.2 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						TOPSOIL (thickness not recorded)								
SS - 1	15	2 2 3 3	5			LEAN CLAY, brown, moist, stiff, trace to with sand	CL			1.00			23.8	
SS - 2	17	2 4 3 3	7							1.00			26	
					915.0	4 (915.2)								
SS - 3	13	2 6 3 3	9	5		CLAYEY SAND WITH GRAVEL, brown, moist to wet, loose	SC-SM							Gravel = 17.1% Sand = 36.5% P200 =46.4%
						6 (913.2)								
SS - 4	17	1 2 3 5	5			LEAN CLAY, brown, moist, stiff, with gravel and sand at 8.5'	CL			1.50			20	
SS - 5	4	11 50/3"	R			8.8 (910.4)				0.50			20.1	
					910.0	End of Boring at 8.8 ft.								Driller noted auger refusal at 9'. Possible bedrock.
				10										
					905.0									
				15										
					900.0									
				20										

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NMR ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NMR		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/7/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/7/2023	BORING NUMBER: B-10
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 389054 EASTING: 2415325	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 920.8 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
				920.0	TOPSOIL (9-inches) 0.8 (920)								
SS - 1	18	2 1 2 3	3		LEAN CLAY, brown, moist, stiff to very stiff, trace sand, with gravel at 3'	CL			1.25-2.00			21.1	
SS - 2	9	2 3 3 4	6						1.25			18.7	
SS - 3	15	2 4 16 19	20	5	5 (915.8)								
				915.0	GRAVEL WITH SILT AND SAND, light brown, moist, medium dense to dense	GP-GM							
SS - 4	19	16 20 25 22	45										
SS - 5	14	18 26 26 24	52	10									
SS - 6	14	9 34 50/4"	R		SS-6: Silty Sand with gravel layer								
				910.0	11.3 (909.5)								
					End of Boring at 11.3 ft.								Auger Refusal at 12'. Possible bedrock.
				15									
				905.0									
				20									
				900.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER NE HOURS: NMR		

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

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PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/7/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/7/2023	BORING NUMBER: B-11
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 388704 EASTING: 2415559	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 917.8 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	24	2 2 3 3	5		TOPSOIL (9-inches) 0.8 (917) LEAN CLAY, brown, moist, stiff to very stiff, trace sand 2 (915.8)	CL			1.25-2.00			25	
SS - 2	18	2 1 1 2	2	915.0	CLAYEY SAND WITH GRAVEL, light brown, very moist, very loose 4 (913.8)	SC							
SS - 3	9	4 50/3"	R	5	LEAN CLAY, light brown, moist, very stiff, trace sand 4.8 (913) End of Boring at 4.8 ft.	CL			2.5			14.4	Driller noted auger refusal at 5.5'. Possible bedrock.
				910.0									
				10									
				905.0									
				15									
				900.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER NE HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

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191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/7/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/7/2023	BORING NUMBER: B-12
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 388072 EASTING: 2415606	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 917.4 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	21	2 2 2 3	4		TOPSOIL (10.5-inches) 0.9 (916.5)								
				915.0	LEAN CLAY, brown, moist, stiff, trace sand 3 (914.4)	CL			1.25			18.3	
SS - 2	14	2 39 50/2	R		GRAVEL WITH SAND, light brown, moist, very dense, trace to with silt, (Possible Weathered Bedrock)	GP							
SS - 3	4	13 15 50/0"	R	5	5 (912.4) End of Boring at 5.0 ft.								Driller noted auger refusal at 5'. Possible bedrock.
				910.0									
				10									
				905.0									
				15									
				900.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER NE HOURS: NMR			

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SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/10/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/10/2023	BORING NUMBER: B-13
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 388168 EASTING: 2415163	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 921.7 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	14	2 2 4 3	6	920.0	TOPSOIL (10-inches) 0.8 (920.9) LEAN CLAY, brown, moist, very stiff 2 (919.7)	CL			2.50			25.1	
SS - 2	15	2 2 2 1	4		CLAYEY SAND, light brown, moist to wet, very loose 4.2 (917.5)	SC							
SS - 3	1	50/2"	R	5	End of Boring at 4.2 ft.								Driller noted auger refusal at 4.5'. Possible bedrock.
				915.0									
				10									
				910.0									
				15									
				905.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER NE HOURS: NMR			

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SOIL BORING LOG

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191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-14
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 388248 EASTING: 2414917	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 925.2 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	15	2 1 2 6	3		TOPSOIL (10-inches) 0.8 (924.4) LEAN CLAY, brown, moist, very stiff, trace sand 2 (923.2)	CL			2.5			25.4	
SS - 2	18	6 10 15 14	25		SILTY SAND WITH CLAY AND GRAVEL, reddish brown, moist, medium dense top of engineered soil at rain garden 7 (elev 921.3) 0.11 in/hr								
SS - 3	12	13 21 15 14	36	5 / 920.0	bottom of rain garden 7 (elev 920.3)	SP-SM							P200 = 22.5%
SS - 4	15	7 9 16 23	25										
SS - 5		50/1"	R		7.6 (917.6) End of Boring at 7.6 ft.								Driller noted no recovery for SS-5. Auger refusal at 7.5'. Possible bedrock.
				10 / 915.0									
				15 / 910.0									
				20 / 905.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR		

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SOIL BORING LOG

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191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-15
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 387917 EASTING: 2414812	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 926.8 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	15	2 2 2 2	4	925.0	TOPSOIL (10-inches) 0.8 (926) LEAN CLAY, brown, moist, stiff	CL			1.0			21.8	
SS - 2	8	1 4 5 5	9		4 (922.8) CLAYEY SAND, light brown, moist to very moist, loose to very dense, trace to with gravel				1.5			27.3	
SS - 3	17	4 4 9 5	13	5									
SS - 4	12	4 5 5 6	10	920.0	SS-4: black sand layer	SC							
SS - 5	0	5 50/5"	R		8.9 (917.9) End of Boring at 8.9 ft.								Driller noted auger refusal at 9.5'. Possible bedrock.
				10									
				915.0									
				15									
				910.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

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SOIL BORING LOG

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191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-16
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 387955 EASTING: 2414415	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 930.5 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
					930.0	TOPSOIL (9-inches)								
						0.8 (929.7)								
SS - 1	18	1 1 2 2	3			LEAN CLAY, brown, moist, stiff, trace sand	CL			1.0			21.2	
SS - 2	9	2 17 5 5	22							1.5			22.8	
						4 (926.5)								
SS - 3	9	2 3 4 3	7	5	925.0	LEAN CLAY WITH SAND, light brown to brown, moist, medium stiff, trace to with gravel	CL			0.5			12.3	
						6 (924.5)								
SS - 4	6	2 5 6 9	11			GRAVEL WITH SAND AND SILT, light brown, moist to wet, medium dense to very dense	GP-GM							
SS - 5	4	50/5"	R			8.4 (922.1)								
						End of Boring at 8.4 ft.								Driller noted auger refusal at 8.5'. Possible bedrock.
				10	920.0									
				15	915.0									
				20	910.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 8 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 8 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 1.5 HOURS: 7.5 ft.			

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SOIL BORING LOG

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Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-17
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 388402 EASTING: 2414212	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 925 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	15	1 1 2 3	3			TOPSOIL (6.5-inches) 0.5 (924.5) LEAN CLAY, brown, moist, stiff, trace sand	CL			1.5			26	
SS - 2	11	1 3 4 12	7			3.5 (921.5) SAND WITH SILT AND GRAVEL, brown, moist to wet, medium dense to very dense SS-3: sandy lean clay layer							13.2	
SS - 3	15	4 17 14 9	31	5	920.0		SP-SM							
SS - 4	15	14 17 12 9	29											
SS - 5	2	50/5"	R			8.4 (916.6) End of Boring at 8.4 ft.								Driller noted auger refusal at 8.5'. Possible bedrock.
				10	915.0									
				15	910.0									
				20	905.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 8 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 8 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 2 HOURS: 8 ft.			

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SOIL BORING LOG

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Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-18
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 388286 EASTING: 2414066	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 931.2 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	12	2 2 3 3	5	930.0	TOPSOIL (6-inches) 0.5 (930.7) LEAN CLAY, brown, moist, stiff, trace sand and gravel	CL			1.0			26.5	
SS - 2	11	2 4 16 20	20		3 (928.2) GRAVEL WITH SILT AND SAND, light brown, moist, medium dense to dense	GP-GM							
SS - 3	13	16 15 17 18	32	5									P200 = 17.9%
SS - 4	1	50/3"	R	925.0	6.3 (924.9) End of Boring at 6.3 ft.								Driller noted auger refusal at 6.5'. Possible bedrock.
				10									
				920.0									
				15									
				915.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR		

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

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191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-19
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 387504 EASTING: 2414212	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 934.9 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	18	4 5 4 5	9			TOPSOIL (10") 0.8 (934.1) CLAYEY SAND, brown, moist, loose to medium dense	SC							P200 = 44.5%
SS - 2	18	4 5 13 12	18			3 (931.9) SAND, brown, moist, medium dense	SP							
SS - 3	18	15 18 22 22	40	5	930.0	4.7 (930.2) CLAYEY SAND, red brown, dry to moist, dense to very dense, trace gravel	SC							P200 = 42.9%
SS - 4	18	9 20 24 22	44											
SS - 5		16 22 50/1"	R			9.1 (925.8) End of Boring at 9.1 ft.								Driller did not record recovery on field log. Driller noted auger refusal at 9.5'. Possible bedrock.
				10	925.0									
				15	920.0									
				20	915.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

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SOIL BORING LOG

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Milwaukee, WI 53207
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PROJECT NAME: Thomas Farms Development	DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1	
PROJECT LOCATION: Delafield, Wisconsin	DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-20	
BORING DRILLED BY: FIRM: GESTRA, CREW CHIEF: D. Harvey	FIELD LOG: B. Griffin	NORTHING: 387522	PROJECT NUMBER: 23083-10
	LAB LOG / QC: D. Dettmers	EASTING: 2414883	DRILLING RIG: Geoprobe
			DRILLING METHOD: 2¼" HSA
			SURFACE ELEVATION: 925.6 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	10	2 3 3 4	6	925.0	TOPSOIL (9-inches) 0.8 (924.8)								
					LEAN CLAY, brown with gray and black mottling, moist, very soft to very stiff, trace sand				1.0			24.7	
					07 in/hr								
SS - 2	14	2 4 3 4	7		top of engineered soil at rain garden 5 (elev 922.0)	CL			2.0	35	20	22.1	
					SS-3: with silt								
SS - 3	10	1 0 1 1	1	5 / 920.0	bottom of rain garden 5 (elev 921.0)				0-0.25			20.6	
SS - 4	0	0 50/1"	R		SS-4: with silt 6.6 (919)				0.5-1.5			18.6	
					End of Boring at 6.6 ft.								Driller noted auger refusal at 6.5'. Possible bedrock.
				10 / 915.0									
				15 / 910.0									
				20 / 905.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR		

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-21
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 387595 EASTING: 2415285	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 917.7 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	9	3 50/3"			TOPSOIL (8-inches) 0.7 (917)								
					GRAVEL WITH SAND, brown and light brown, moist, dense to very dense, possible cobbles or boulders at 1'								
SS - 2	3	10 18 26 35	44	915.0		GP							
SS - 3	1	50/1"	R	5	4.6 (913.1) End of Boring at 4.6 ft.								Driller noted auger refusal at 4.5'. Possible bedrock.
				910.0									
				10									
				905.0									
				15									
				900.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

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191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-22
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 387698 EASTING: 2415438	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 916.3 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	20	0 0 1 2	1	915.0	TOPSOIL (9-inches) 0.8 (915.5) LEAN CLAY WITH SAND, brown, moist, stiff, trace gravel, layer of brown/gray silty clay at 5'	CL			1			22.8	
SS - 2	19	0 3 3 3	6						2.25			23.5	
SS - 3	10	2 1 2 5	3	5 910.0	5 (911.3) CLAYEY SAND WITH GRAVEL, brown, moist, medium dense	SC-SM			1.5				Gravel = 21.1% Sand = 33.6% P200 =45.4%
SS - 4	23	6 8 12 29	20		7.5 (908.8)								
SS - 5	1	50/1"	R		GRAVEL, light brown, moist, medium dense, with sand 8.1 (908.2) End of Boring at 8.1 ft.	GP							Driller noted auger refusal at 8.1'. Possible bedrock.
				10 905.0									
				15 900.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR		

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-23
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 387716 EASTING: 2413881	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 940.4 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	20	2 4 12 9	16	940.0	TOPSOIL (10-inches) 0.8 (939.6) CLAYEY SAND WITH GRAVEL, brown, moist, medium dense								
SS - 2	9	9 9 9 7	18			SC							
SS - 3	9	3 9 12 10	21	5 935.0	6 (934.4) SAND WITH SILT AND GRAVEL, light brown, moist, medium dense								
SS - 4	12	7 10 10 7	20		8 (932.4) SILTY SAND WITH GRAVEL, light brown to brown, moist, very dense, trace clay	SP-SM							
SS - 5	16	19 24 33 29	57	10		SM							
SS - 6	5	21 50/2"	R	930.0	10.7 (929.7) End of Boring at 10.7 ft.								Driller noted auger refusal at 10.5'. Possible bedrock.
				15 925.0									
				20 920.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR		

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SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-24
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 387950 EASTING: 2413836	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 940.7 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	14	2 6 12 12	18	940.0	TOPSOIL (8-inches) 0.7 (940)								
					SAND WITH GRAVEL, light brown, moist, medium dense 2 (938.7)	SP							
SS - 2	17	3 3 3 3	6		CLAYEY SAND, light brown, moist, trace to with gravel								
SS - 3	24	1 4 6 7	10	5 935.0		SC							
SS - 4	21	3 14 16 18	30		7 (933.7)								
SS - 5	21	5 14 22 50/3"	36		SILTY/CLAYEY SAND WITH GRAVEL, light brown, moist, dense SS-4: 10" clay layer	SC-SM							
					9.8 (930.9)								
				10 930.0	End of Boring at 9.8 ft.								Driller noted auger refusal at 10.5'. Possible bedrock.
				15 925.0									
				20 920.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

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SOIL BORING LOG

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191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development	DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1	
PROJECT LOCATION: Delafield, Wisconsin	DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-25	
BORING DRILLED BY: FIRM: GESTRA, CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz	NORTHING: 388347	PROJECT NUMBER: 23083-10
	LAB LOG / QC: D. Dettmers	EASTING: 2413452	DRILLING RIG: Geoprobe
			DRILLING METHOD: 2¼" HSA
			SURFACE ELEVATION: 932.6 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	18	2 1 2 2	3		TOPSOIL (7.5-inches) 0.6 (932) LEAN CLAY WITH SAND, brown, moist, stiff, possible cobble or boulder at 2.5'	CL			1.5			21.5	
SS - 2	6	1 50/2"	R	930.0	top of engineered soil at basin 2 (elev 931.0)				1.0			25	
SS - 3	9	6 6 6 5	12	5	4 (928.6) SILTY SAND WITH GRAVEL, moist, medium dense 1.63 in/hr bottom of basin 2 (elev 928.0)	SM							P200 = 19.5%
SS - 4	12	3 7 5 5	12	925.0									
SS - 5	6	15 30 18 14	48	10	8 (924.6) GRAVEL WITH SAND, brown, very dense, trace silt	GP							
SS - 6	12	18 41 24	65										
SS - 7	1	50/1"	R	920.0	12.1 (920.5) End of Boring at 12.1 ft.								Driller noted auger refusal at 12'. Possible bedrock
				15									
				915.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 8 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 7 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 3 HOURS: 7 ft.			

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SOIL BORING LOG

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191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-26
BORING DRILLED BY: FIRM: GESTRA, CREW CHIEF: S. Gonyer	FIELD LOG: C. Ray	NORTHING: 388013	PROJECT NUMBER: 23083-10
	LAB LOG / QC: D. Dettmers	EASTING: 2413386	DRILLING RIG: Geoprobe
			DRILLING METHOD: 3¼" HSA
			SURFACE ELEVATION: 938.3 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	13	1 1 2 2	3		TOPSOIL (8-inches) 0.7 (937.6)								
					LEAN CLAY, brown, moist, very stiff, trace sand	CL			2.5			21.4	
SS - 2	14	1 3 3 3	6	935.0	4 (934.3)				2.0			26.9	
					SILTY CLAY, light brown, moist, medium stiff to stiff								
SS - 3	14	1 2 3 4	5	5	0.11 in/hr; top of engineered soil at basin 1 (elev 933.5)	CL-ML			0.5-1.0			19.3	P200 = 97.2%
SS - 4	15	1 3 14 5	17		7 (931.3)				1.0			20.2	
					SANDY LEAN CLAY WITH GRAVEL, brown, moist to wet, stiff								
				930.0	0.11 in/hr; bottom of basin 1 (elev 930.5)								
SS - 5	15	4 15 17 19	32						1.5			9.3	
				10		CL							
SS - 6	14	5 14 19 21	33		SS-6: rock pieces				1.5			8.3	
					13 (925.3)								
SS - 7	19	9 45 19 16	64	925.0	GRAVEL WITH SILT AND SAND, light brown, wet, very dense, rock pieces (possible weathered bedrock)	GP-GM							
SS - 8	12	6 24 50/3"	R	15	15.3 (923)								
					End of Boring at 15.3 ft.								Driller noted auger refusal at 16'. Possible bedrock.
				920.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 14 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 11 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 48 HOURS: 5 ft.			

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SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-27
BORING DRILLED BY: FIRM: GESTRA; CREW CHIEF: A. Woerpel	FIELD LOG: B. Griffin	NORTHING: 387887	PROJECT NUMBER: 23083-10
	LAB LOG / QC: D. Dettmers	EASTING: 2413473	DRILLING RIG: Diedrich D50 ATV
			DRILLING METHOD: 3¼" HSA
			SURFACE ELEVATION: 939 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	4	2 2 3 4	5		TOPSOIL (4-inches) 0.3 (938.7)								
					LEAN CLAY, dark brown, moist, medium stiff 1.1 (937.9)	CL			0.5			25	
					LEAN CLAY, brown, moist, medium stiff, trace sand 1.6 (937.4)	CL							
SS - 2	15	2 3 4 5	7		LEAN CLAY, light brown with gray mottling, moist, medium stiff to stiff				1.0	25	10	18.9	
				935.0									
SS - 3	16	2 2 2 4	4	5	top of engineered soil at basin 1 (elev 933.5)	CL			1.0			18	
					6.5 (932.5)								
SS - 4	11	1 3 4 8	7		SANDY LEAN CLAY WITH GRAVEL, light brown, moist, stiff				1.5			10.1	
					0.11 in/hr								
SS - 5	10	5 28 30 16	58	930.0	SS-5: rock pieces	CL						8.8	
				10 ▼	bottom of basin 1 (elev 930.5)								
SS - 6	13	19 12 17 34	29	▽	11.5 (927.5)								
					GRAVEL, brown, wet, medium dense to very dense								
					3.6 in/hr								
SS - 7	10	9 5 23 23	28	925.0		GP							
SS - 8	12	4 7 50/2"	R	15 ▼	clayey gravel at 14'								
					15.2 (923.8)								
					End of Boring at 15.2 ft.								Driller noted auger refusal at 15'. Possible bedrock.
				920.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 11.5 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 15 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 24 HOURS: 10 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-28
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: S. Gonyer	FIELD LOG: C. Ray LAB LOG / QC: D. Dettmers	NORTHING: 387470 EASTING: 2413507	PROJECT NUMBER: 23083-10 DRILLING RIG: LC 55 DRILLING METHOD: 3¼" HSA SURFACE ELEVATION: 943.4 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	17	1 1 2 3	3		TOPSOIL (10-inches) 0.8 (942.6) LEAN CLAY, brown, moist, stiff				1.5			19.8	
SS - 2	16	2 3 4 5	7	940.0	with gravel at 2-4'	CL			1.5			15.8	
SS - 3	16	2 4 5 7	9	5	4 (939.4) CLAYEY GRAVEL WITH SAND, light brown, moist, loose 5.5 (937.9)	GC							Gravel = 45.8% Sand = 25.7% P200 =28.5%
SS - 4	19	5 12 17 16	29		SAND WITH GRAVEL, brown, moist, medium dense 8 (935.4)	SP							
SS - 5	20	7 17 27 14	44	935.0	SAND WITH SILT AND GRAVEL, light brown, moist, medium dense to dense	SP-SM							
SS - 6	18	4 12 14 18	26	10	12 (931.4)								
SS - 7	17	12 24 30 54	54	930.0	GRAVEL WITH CLAY AND SAND, brown, moist to wet, very dense	GP-GC							
SS - 8	5	7 50/3"	R	15	clayey sand layer at 14' SS-8: rock pieces								
SS - 9	0	50/1"			16.1 (927.3) End of Boring at 16.1 ft.								Driller noted no recovery. Auger refusal at 16'. Possible bedrock.
				925.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 14 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 16 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 48 HOURS: 12 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

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191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-29
BORING DRILLED BY: FIRM: GESTRA, CREW CHIEF: S. Gonyer	FIELD LOG: C. Ray	NORTHING: 387445	PROJECT NUMBER: 23083-10
	LAB LOG / QC: D. Dettmers	EASTING: 2412979	DRILLING RIG: LC 55
			DRILLING METHOD: 3¼" HSA
			SURFACE ELEVATION: 946.1 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	13	2 2 3 5	5	945.0	TOPSOIL (9-inches) 0.8 (945.3) LEAN CLAY, brown, moist, stiff to very stiff 2 (944.1)	CL			1.0-2.0			21.7	
SS - 2	18	2 3 3 4	6		SANDY LEAN CLAY, brown to light brown, moist, stiff, trace gravel	CL			1.0			7.6	
SS - 3	16	3 4 5 5	9	5 / 940.0					1.0			8.5	
SS - 4	19	5 11 16 20	27		7 (939.1) SILTY SAND WITH GRAVEL, light brown, moist, medium dense	SM			0.5				
SS - 5	16	5 14 18 18	32		top of engineered soil at basin 4 (elev 936.0) 9 (937.1) SILTY SAND, light brown, moist, medium dense to dense 3.6 in/hr	SM							P200 = 23.6%
SS - 6	18	5 12 17 20	29	10 / 935.0	bottom of basin 4 (elev 935.0)	SM							
SS - 7	20	12 35 24 42	59		SILTY SAND WITH GRAVEL, light brown, moist to wet, dense to very dense 3.6 in/hr	SM							
SS - 8	0	12 20 13 16	33	15 / 930.0									
SS - 9	7	22 50/5"			17 (929.1) GRAVEL WITH SAND, light brown, wet, very dense, rock pieces (possible weathered bedrock) 18.1 (928)	GP							
SS - 10	1	50/1"	R		End of Boring at 18.1 ft.								Driller noted auger refusal at 20'. Possible bedrock.
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 13 ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▽	WATER LEVEL AT COMPLETION: NE	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▽	WATER LEVEL AFTER 0 HOURS: NMR		

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-30
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: S. Gonyer	FIELD LOG: C. Ray LAB LOG / QC: D. Dettmers	NORTHING: 387504 EASTING: 2412823	PROJECT NUMBER: 23083-10 DRILLING RIG: LC 55 DRILLING METHOD: 3¼" HSA SURFACE ELEVATION: 948.5 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	8	2 2 2 4	4		TOPSOIL (24-inches), LEAN CLAY, dark brown, moist							21	
					2 (946.5)								
SS - 2	13	2 3 4 7	7	945.0	SANDY LEAN CLAY, light brown, moist, stiff, trace gravel	CL			1.0			9.1	
					4 (944.5)								
SS - 3	12	5 6 7 8	13	5	SILTY CLAY WITH GRAVEL, light brown, moist, stiff	CL-ML			1.0			10.7	
SS - 4	15	9 10 10 13	20										
					7 (941.5)								
SS - 5	5	16 25 50/5"	R	940.0	GRAVEL WITH SAND, light brown, moist, medium dense	GP							
					9 (939.5)								
SS - 6	4	35 50/3"	R	10	GRAVEL WITH SAND, gray and light brown, moist, very dense, rock pieces (possible weathered bedrock)	GP							
SS - 7	4	20 50/1"	R										
					12.7 (935.8)								
					End of Boring at 12.7 ft.								
				935.0									Driller noted auger refusal at 13'. Possible bedrock.
				15									
				930.0									
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE	CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NE		

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-31
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: A. Woerpel	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 387799 EASTING: 2413138	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 939.7 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	16	3 3 3 6	6			TOPSOIL (10-inches) 0.8 (938.9) LEAN CLAY, brown, moist, stiff to very stiff				2.5			22.3	
SS - 2	10	3 4 4 5	8			trace of black lean clay at 2-4' 4.3 (935.4)	CL			1.5-2.0			26.1	
SS - 3	12	2 2 4 8	6	5	935.0	CLAYEY SAND WITH GRAVEL, brown to light brown, moist to wet, loose to medium dense								
SS - 4	12	3 7 10 22	17			▽	SC							
SS - 5	13	7 6 8 8	14	10	930.0									
SS - 6	17	11 15 50/5"	R			11 (928.7) SILTY SAND, light brown, wet, very dense, possible weathered bedrock								
SS - 7	8	50/5"	R			▼	SM							
SS - 8	5	50/5"	R			14.5 (925.2)								
				15	925.0	End of Boring at 14.5 ft.								Drilller noted auger refusal at 15'. Possible bedrock.
				20	920.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 8 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 12 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
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Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-32
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: S. Gonyer	FIELD LOG: C. Ray LAB LOG / QC: D. Dettmers	NORTHING: 388020 EASTING: 2413038	PROJECT NUMBER: 23083-10 DRILLING RIG: LC 55 DRILLING METHOD: 3¼" HSA SURFACE ELEVATION: 939.7 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						TOPSOIL (8-inches)								
						0.7 (939)								
SS - 1	15	1 2 3 3	5			LEAN CLAY, brown, moist, stiff to very stiff	CL			1.5-2.5			21.1	
SS - 2	14	1 2 3 2	5			3 (936.7)				1.5			20.3	
SS - 3	17	1 1 4 5	5	5	935.0	CLAYEY SAND, light brown, moist, loose, trace gravel	SC							
SS - 4	12	16 40 18 12	58			7 (932.7)								
						SAND WITH SILT AND GRAVEL, light brown, moist, very dense	SP-SM							
						8 (931.7)								
SS - 5	17	12 16 20 21	36	10	930.0	GRAVEL WITH SAND, light brown, wet, dense	GP							
						10 (929.7)								
SS - 6	15	13 25 19 18	44			SILTY SAND WITH GRAVEL, light brown, wet, dense to very dense, trace clay	SM							
SS - 7	0	50/1"	R			possible weathered bedrock 12' to EOB								Driller noted no reovery.
SS - 8	5	9 50/3"	R	15	925.0	14.8 (924.9)								
						End of Boring at 14.8 ft.								Driller noted auger refusal at 16'. Possible bedrock.
				20	920.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 8 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 9 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 48 HOURS: 9 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-33
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: A. Woerpel	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 388433 EASTING: 2412595	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 924.1 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	10	4 4 5 6	9		TOPSOIL (6-inches) 0.5 (923.6) LEAN CLAY WITH GRAVEL, brown, moist, very stiff, organics (possible fill)	CL			2.0			21.8	
SS - 2	13	3 5 3 2	8		2.2 (921.9) CLAYEY SAND, light brown, loose to medium dense, trace gravel								
SS - 3	13	2 3 4 6	7	920.0 5									
SS - 4	8	3 4 12 9	16			SC							Gravel = 14.9% Sand = 42.9% P200 =42.2%
SS - 5	13	4 11 11 11	22	915.0 10									
SS - 6	19	5 14 14 21	28		10.4 (913.7) SILT, blueish gray with brown mottling, dry to moist, medium dense to very dense							7.8	
SS - 7	16	6 11 12	23			ML						9.8	
SS - 8	17	9 19 31 27	50	910.0 15	16 (908.1)								
SS - 9	6	50/0"	R		End of Boring at 16.0 ft.								Driller noted auger refusal at 17'. Possible bedrock.
				905.0 20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 3.5 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 24 HOURS: 2 ft.			

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SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-34
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: A. Woerpel	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 388315 EASTING: 2412460	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 929.6 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	11	3 3 4 6	7		TOPSOIL (5-inches) 0.4 (929.2) LEAN CLAY, brown, moist, very stiff	CL			3.0			21.7	
SS - 2	12	3 4 6 5	10		2.5 (927.1) CLAYEY SAND, light brown, moist to wet, medium dense, trace to with gravel								P200 = 21.0%
SS - 3	0	5 7 10 7	17	925.0 5									Driller noted no recovery.
SS - 4	0	4 5 6 8	11			SC							Driller noted no recovery. Flight auger sample.
SS - 5	15	6 11 16 38	27	920.0 10									
SS - 6	10	27 50/4"	R		10.5 (919.1) GRAVEL WITH SAND, dark brown, wet, very dense 10.8 (918.8) End of Boring at 10.8 ft.	GP							Driller noted auger refusal at 11'. Possible bedrock.
				915.0 15									
				910.0 20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 9 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 8 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 24 HOURS: 3 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/11/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/11/2023	BORING NUMBER: B-35
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: S. Gonyer	FIELD LOG: C. Ray LAB LOG / QC: D. Dettmers	NORTHING: 387880 EASTING: 2412395	PROJECT NUMBER: 23083-10 DRILLING RIG: LC 55 DRILLING METHOD: 3¼" HSA SURFACE ELEVATION: 937.8 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	15	1 2 2 2	4			TOPSOIL (9-inches) 0.8 (937) LEAN CLAY, brown, moist, stiff to very stiff				2.0			21.2	
SS - 2	12	1 2 3 4	5		935.0	sandy lean clay 2-4'	CL			1.0				
SS - 3	19	2 3 3 5	6	5		4 (933.8) CLAYEY SAND WITH GRAVEL, light brown, moist, loose	SC							
SS - 4	16	7 18 18 16	36		930.0	7 (930.8) SAND WITH SILT AND GRAVEL, light brown, moist, dense to very dense	SP-SM							
SS - 5	4	26 50/6"	R			8.5 (929.3) GRAVEL WITH SAND, light brown, moist to wet, very dense, possible weathered bedrock								
SS - 6	3	50/5"	R	10			GP							
SS - 7	6	7 50/5"	R			SS-7: trace to with clay 12.9 (924.9)								
					925.0	End of Boring at 12.9 ft.								Driller noted auger refusal at 13'. Possible bedrock.
				15										
					920.0									
				20										

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 10 ft.	▨	CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 10 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 48 HOURS: 9 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
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Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-36
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 389672 EASTING: 2413827	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 900.7 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	24	0 1 3 3	4	900.0	TOPSOIL (9-inches) 0.8 (899.9) LEAN CLAY, brown, moist, stiff to very stiff, trace sand	CL			1.5			25.9	Staked location not accessible. B-36 offset 100' S and 135' E. GESTRA obtained coordinates and elevations.
SS - 2	11	0 2 1 1	3		▼ 4 (896.7)				1.5-2.5			26.1	
SS - 3	11	4 6 5 4	11	5 895.0	CLAYEY SILTY SAND, light brown, very moist to wet, loose to dense	SC-SM							
SS - 4	20	3 4 5 4	9										
SS - 5	7	11 12 22 13	34	10	10 (890.7)								
SS - 6	14	16 50 50/4"	R	890.0	SILTY SAND, light brown, moist, very dense	SM							Driller noted possible cobbles or boulders at 11'.
SS - 7	17	20 32 50/5"	R										
SS - 8	16	36 56 50/4"	R	15	15.4 (885.3)								
				885.0	End of Boring at 15.4 ft.								Driller noted auger refusal at 15.5'. Possible bedrock.
				20 880.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 4 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 4 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0.5 HOURS: 4 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-37
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: D. Harvey	FIELD LOG: C. Dietz LAB LOG / QC: D. Dettmers	NORTHING: 389770 EASTING: 2413886	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 899.3 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	19	2 2 3 3	5		TOPSOIL (7.5-inches) 0.6 (898.7) LEAN CLAY WITH SAND, brown, moist, stiff	CL			1.25			17.3	
SS - 2	17	2 3 5 9	8		3 (896.3) CLAYEY SAND, light brown, very moist, loose to medium dense, trace gravel	SC						11	Gravel = 14.7% Sand = 40.8% P200 =44.5%
SS - 3	1	5 7 7 6	14	895.0 5									Driller noted rock in SS-3. Possible cobble and/or boulder.
					6 (893.3) SILTY CLAYEY SAND, light brown, moist, medium dense to very dense, trace gravel								
SS - 4	20	4 8 9 10	17										
SS - 5	23	10 18 17 23	35	890.0 10									
SS - 6	24	13 21 23 23	44			SC-SM							
SS - 7	24	28 36 34 33	70										
				885.0	wet at 14'								
SS - 8	19	19 32 42 39	74	15	moist at 15'								
SS - 9	14	31 41 50/2"	R		wet at 16'								
					17.2 (882.1) End of Boring at 17.2 ft.								Driller noted auger refusal at 17.5'. Possible bedrock.
				880.0 20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 14 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 7 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 1 HOURS: 5.5 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
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PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-38
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: A. Woerpel	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 389394 EASTING: 2413909	PROJECT NUMBER: 23083-10 DRILLING RIG: Diedrich D50 ATV DRILLING METHOD: 3¼" HSA SURFACE ELEVATION: 910 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						TOPSOIL (measurement not recorded)								
SS - 1	8	2 3 4 35	7			0.5 (909.5) LEAN CLAY, red and brown with black mottling, moist, stiff	CL			1.0			24.3	Driller noted possible boulder.
						2 (908)								
SS - 2	12	3 3 4 6	7			CLAYEY SAND, light brown, moist to very moist, loose to medium dense								
SS - 3	13	3 5 11 8	16	5	905.0	sandy gravel layer at 4.5'	SC							
SS - 4	14	3 4 10 8	14			8 (902)								
SS - 5	10	4 31 15 11	46			SANDY LEAN CLAY, light brown, moist, very stiff gravel layer at 9'				2.5			7.4	
				10	900.0		CL							
SS - 6	16	6 9 13	22							2.0			5.7	
						12 (898)								
SS - 7	15	3 3 5	8			SANDY LEAN CLAY, gray, moist, stiff	CL			1.0			10.1	
						14 (896)								
SS - 8	12	4 8 7	15	15	895.0	CLAYEY/SILTY SAND, gray, very moist to moist, medium dense to very dense, trace to with gravel	SC-SM							
SS - 9	10	15 30 50/2"	R			17.2 (892.8)								
						End of Boring at 17.2 ft.								
				20	890.0									Driller noted auger refusal at 19'. Possible bedrock.

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: NE ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: NE		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS: NMR			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA Engineering Inc.
191 W Edgerton Avenue
Milwaukee, WI 53207
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME: Thomas Farms Development		DATE DRILLING STARTED: 4/12/2023	PAGE NUMBER: 1 of 1
PROJECT LOCATION: Delafield, Wisconsin		DATE DRILLING ENDED: 4/12/2023	BORING NUMBER: B-39
BORING DRILLED BY: FIRM: GESTRA CREW CHIEF: A. Woerpel	FIELD LOG: B. Griffin LAB LOG / QC: D. Dettmers	NORTHING: 389169 EASTING: 2413830	PROJECT NUMBER: 23083-10 DRILLING RIG: Geoprobe DRILLING METHOD: 2¼" HSA SURFACE ELEVATION: 911.7 ft

Number and Type	Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
SS - 1	12	2 3 4 4	7	910.0	TOPSOIL (5-inches) 0.4 (911.3) LEAN CLAY, brown, moist, very stiff, trace sand	CL			2.0			30.3	
SS - 2	12	2 6 7 6	13		2 (909.7) LEAN CLAY WITH SAND, light brown with gray mottling, moist, stiff, trace gravel	CL			1.5			16.5	
SS - 3	18	3 9 8 16	17	5	4.8 (906.9) CLAYEY SAND, light brown, moist, medium dense, trace gravel gravelly at 5'	SC							
SS - 4	24	2 3 3 5	6	905.0	8 (903.7) SANDY LEAN CLAY, light brown, moist to very moist, stiff	CL			1.0			9.9	
SS - 5	18	3 4 6 8	10	10									
SS - 6	24	7 8 12 11	20	900.0	12 (899.7) CLAYEY SAND, gray, moist, loose to medium dense, trace gravel	SC			1.0			9	
SS - 7	22	2 3 6 13	9		Wet black sand at 14'								
SS - 8	14	3 11 11 25	22	15	15 (896.7) SANDY SILT, gray, moist, very dense, trace gravel	ML						9.5	
SS - 9	13	21 47 50/1"	R	895.0	17.1 (894.6) End of Boring at 17.1 ft.							7	Driller noted auger refusal at 17.5'. Possible bedrock.
				20									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING: 13 ft.		CAVE DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION: 14 ft.		CAVE DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐
▼	WATER LEVEL AFTER 24 HOURS: 2 ft.			

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

Wis. Dept. of Safety and Professional Services
Division of Industry Services

SOIL EVALUATION - STORM

in accordance with SPS 382.365 and 385, Wis. Adm. Code

Attach complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent slope, scale or dimensions, north arrow, and BM referenced to nearest road.

Please print all information.

Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04 (1) (m)).

County: Waukesha

Parcel I.D.: DELT0809995

Reviewed by: J. Metzinger, E.I.T

Date: 04/24/2023

Property Owner	Property Location
THE ROBERT G AND ANN B THOMAS REVOCABLE TRUST	Govt. Lot SE 1/4 NE 1/4 S 23 T 7 N R 18 ☑ E (or) ☐ W
Property Owner's Mailing Address: N20W29352 OAKTON RD	Lot # / Block # / Subd. Name or CSM#
City: PEWAUKEE; State: WI; Zip Code: 53072; Phone Number: ( )	☐ City ☐ Village ☒ Town: DELAFIELD; Nearest Road: THOMAS ROAD

Drainage area _____ ☐ sq. ft. ☐ acres

Optional:

Test Site Suitable for (check all that apply)

☐ Irrigation ☐ Bioretention trench ☐ Trench(es)

☐ Rain garden ☐ Grassed swale ☐ Reuse

☐ Infiltration trench ☐ SDS (> 15' wide) ☐ Other _____

Hydraulic Application Test Method:

☒ Morphological Evaluation

☐ Double-Ring Infiltrometer

☐ Other (specify) _____

B-1

Obs. # ☒ Boring ☐ Pit

Ground surface elev. 899.7 ft.

Depth to limiting factor -48 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	36	10YR 3/4	-	CL	2, VF, SBK	MFI	-	< 10	0.03
C	45	10YR 6/4	c, 2, D, 10YR 7/1	GRSL	0, M	MFR	-	26.9	0.50
C	96	10YR 6/6	-	GRSCL	0, SG	MVFR	-	15 - 30	0.11
C	150	10YR 6/4	-	XGRLS	0, M	MFR	-	50 - 65	1.63

B-2

Obs. # ☒ Boring ☐ Pit

Ground surface elev. 906.9 ft.

Depth to limiting factor -60 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	7	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
BC	24	10YR 3/4	-	C	2, VF, SBK	MVFI	-	<10	0.07
C	48	10YR 6/6	-	GRSL	0, M	MFR	-	15 - 20	0.50
C	60	10YR 6/4	-	GRSIL	0, M	MFR	-	15 - 30	0.13
C	66	10YR 8/1	-	VGRS	0, SG	MLO	-	35 - 55	3.60
C	102	10YR 6/4	-	GRSIL	0, M	MFR	-	15 - 30	0.13

CST/PSS Name (Please Print): Douglas Dettmers, PE

Signature: Douglas Dettmers

CST/PSS Number: 35060-6

Address: GESTRA Engineering, Inc. - 191 W. Edgerton Avenue, Milwaukee, WI 53207

Date Evaluation Conducted: 04/24/2023

Telephone Number: 414-933-7444

Property Owner THE ROBERT G AND ANN B THOMAS REVOCABLE TRU Parcel ID # DELT0809995 Page 2 of 5

B-3 Obs. # ☒ Boring ☐ Pit Ground surface elev. 915.6 ft. Depth to limiting factor -120 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	6	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	24	10YR 3/6	-	SC	2, VF, SBK	MFI	-	5 - 14	0.04
Cr	120	10YR 8/2	-	XGRS	0, SG	MLO	-	60 - 80	3.60

B-4 Obs. # ☒ Boring ☐ Pit Ground surface elev. 919.8 ft. Depth to limiting factor -114 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	36	10YR 3/4	-	C	2, VF, SBK	MFI	-	< 10	0.07
C	48	10YR 3/4	-	VGRC	0, M	MFI	-	35 - 45	0.07
C	72	10YR 7/2	-	XGRSL	0, SG	0, SG	-	70 - 80	0.50
C	114	10YR 6/4	-	VGRSIL	0, M	MFR	-	50 - 59	0.13

B-8 Obs. # ☒ Boring ☐ Pit Ground surface elev. 918.7 ft. Depth to limiting factor -78 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/1	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	66	10YR 3/6	-	SCL	2, VF, SBK	MFI	-	< 5	0.11
C	78	10YR 5/4	-	GRSICL	0, M	MFI	-	20 - 30	0.04

Property Owner THE ROBERT G AND ANN B THOMAS REVOCABLE TRU Parcel ID # DELT0809995 Page 3 of 5

B-13 Obs. # ☒ Boring ☐ Pit Ground surface elev. 921.7 ft. Depth to limiting factor -54 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/3	-	SIL	2, VF, SBK	MFR		< 5	0.13
B	24	10YR 3/6	-	C	2, VF, SBK	MVFI		< 10	0.07
C	54	10YR 5/8	-	SCL	0, M	MVFR		5 - 14	0.11

B-14 Obs. # ☒ Boring ☐ Pit Ground surface elev. 925.2 ft. Depth to limiting factor -90 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	24	10YR 3/6	-	C	2, VF, SBK	MVFI	-	< 10	0.07
C	72	10YR 5/4	-	VGRLS	0, SG	MLO	-	35 - 45	1.63
C	90	7.5YR 4/3	-	VGRSCL	0, M	MVFI	-	40 - 50	0.11

B-21 Obs. # ☒ Boring ☐ Pit Ground surface elev. 917.7 ft. Depth to limiting factor -54 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	8	10YR 2/1	-	L	2, VF, SBK	MFR	-	< 5	0.24
C	54	10YR 7/2 and 10YR 4/1	-	GR/CB	0, SG	MLO	-	> 90	3.60

Property Owner THE ROBERT G AND ANN B THOMAS REVOCABLE TRU Parcel ID # DELT0809995 Page 4 of 5

B-22 Obs. # ☒ Boring ☐ Pit Ground surface elev. 916.3 ft. Depth to limiting factor -96 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	9	10YR 2/2	-	L	2, VF, SBK	MFR	-	< 5	0.24
B	60	10YR 3/6	-	CL	2, VF, SBK	MFI	-	< 5	0.03
C	90	10YR 4/6	-	GRSL	0, M	MFI	-	32.9	0.50
C	97	10YR 6/6	-	XGRS	0, SG	MLO	-	70 - 85	3.60

B-9 Obs. # ☒ Boring ☐ Pit Ground surface elev. 919.2 ft. Depth to limiting factor -108 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	12	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	48	10YR 3/4	-	C	2, VF, SBK	MFI	-	< 10	0.03
C	72	10YR 5/6	-	GRSL	0, M	MVFR	-	23.7	0.50
C	102	10YR 5/6	-	SICL	0, M	MFI	-	< 10	0.04
C	108	10YR 5/6	-	GRSICL	0, M	MFI	-	15 - 20	0.04

B-10 Obs. # ☒ Boring ☐ Pit Ground surface elev. 920.8 ft. Depth to limiting factor -144 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	9	10YR 3/3	-	SICL	2, VF, SBK	MFI	-	< 5	0.04
B	36	10YR 3/4	-	CL	2, VF, SBK	MFI	-	< 10	0.03
C	60	10YR 5/6	-	GRSL	0, M	MFR	-	15 - 20	0.50
C	72	10YR 6/6	-	XGRLS	0, SG	MLO	-	70 - 80	1.63
C	96	10YR 5/8	-	VGRLS	0, SG	MLO	-	35 - 50	1.63
C	144	10YR 6/6	-	XGRLS	0, SG	MLO	-	60 - 80	1.63

B-11 Obs. # ☒ Boring ☐ Pit Ground surface elev. 917.8 ft. Depth to limiting factor -66 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	24	10YR 3/4	-	C	2, VF, SBK	MFI	-	< 10	0.07
C	48	10YR 5/6	-	SCL	0, M	MVFR	-	10 - 14	0.11
C	66	10YR 5/8	-	SICL	0, M	MFI	-	< 10	0.04

B-12 Obs. # ☒ Boring ☐ Pit Ground surface elev. 917.4 ft. Depth to limiting factor -60 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10.5	10YR 2/1	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	36	10YR 3.5/6	-	CL	2, VF, SBK	MFI	-	< 10	0.03
Cr	48	10YR 7/6	-	XGRLS	0, SG	MLO	-	60 - 80	1.63
Cr	60	10YR 5/8	-	XGRS	0, SG	MLO	-	60 - 80	3.60

Test Results and/or Summary Comments

*All borings terminated on possible bedrock refusal.

**Depth to limiting layer determined based on shallowest groundwater level observed during/after drilling, or depth to top of bedrock refusal.

B-9: Topsoil thickness assumed (not measured)

Wis. Dept. of Safety and Professional Services
Division of Industry Services

SOIL EVALUATION - STORM

in accordance with SPS 382.365 and 385, Wis. Adm. Code

Attach complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent slope, scale or dimensions, north arrow, and BM referenced to nearest road.

Please print all information.

Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04 (1) (m)).

County: Waukesha

Parcel I.D.: DELT0809996

Reviewed by: J. Metzinger, E.I.T.

Date: 04/24/2023

Property Owner: KELLEN H WESSON

Property Owner's Mailing Address: 11663 N BOBOLINK LN

City: MEQUON | State: WI | Zip Code: 53092 | Phone Number: ( )

Property Location

Govt. Lot | SW 1/4 NE 1/4 S 23 T 7 N R 18 ☑ E (or) ☐ W

Lot # | Block # | Subd. Name or CSM#

☐ City ☒ Village ☐ Town | Nearest Road: CROOKED CREEK ROAD

DELAFIELD

Drainage area _____ ☐ sq. ft. ☐ acres

Optional:

Test Site Suitable for (check all that apply)

☐ Irrigation ☐ Bioretention trench ☐ Trench(es)

☐ Rain garden ☐ Grassed swale ☐ Reuse

☐ Infiltration trench ☐ SDS (> 15' wide) ☐ Other _____

Hydraulic Application Test Method:

☒ Morphological Evaluation

☐ Double-Ring Infiltrometer

☐ Other (specify) _____

B-5

Obs. # ☒ Boring ☐ Pit

Ground surface elev. 917.7 ft.

Depth to limiting factor -78 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
C	60	10YR 6/6	-	GRSCL	0, M	MFR	-	15 - 25	0.11
C	83	10YR 6/6	-	XGRLS	0, SG	MLO	-	60 - 75	1.63

B-6

Obs. # ☒ Boring ☐ Pit

Ground surface elev. 912.4 ft.

Depth to limiting factor -162 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	11	10YR 3/2	-	SIL	2, VF, SBK	MFI	-	< 5	0.13
B	36	10YR 4/6	-	GRSL	0, M	MFR	-	30.6	0.50
C	108*	10YR 6/6	c, 1, P, 10YR 6/1	VGRSCL	0, M	MFI	-	35 - 45	0.11
C	162	10YR 5/8	-	XGRSCL	0, M	MVFI	-	60 - 75	0.11
	*With 10YR 3/4 sand layer at 72 inches								

CST/PSS Name (Please Print): Douglas Dettmers, PE

Signature: Douglas Dettmers

CST/PSS Number: 35060-6

Address: GESTRA Engineering, Inc. - 191 W. Edgerton Avenue, Milwaukee, WI 53207

Date Evaluation Conducted: 04/24/2023

Telephone Number: 414-933-7444

Property Owner KELLEN H WESSON Parcel ID # DELT0809996 Page 2 of 3

B-36 Obs. # ☒ Boring ☐ Pit Ground surface elev. 900.7 ft. Depth to limiting factor -48 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	9	10YR 2/1	-	SICL	2, VF. SBK	MFR	-	< 5	0.04
B	48	10YR 3/4	-	C	2, VF. SBK	MVFI	-	< 10	0.07
C	72	10YR 5/8	-	GRSL	0, M	MVFR	-	15 - 25	0.50
C	120	10YR 5/8	-	GRSCL	0, M	MFI	-	15 - 25	0.11
C	144	10YR 6/4	-	GRSIL	0, M	MFR	-	15 - 20	0.13
C	186	10YR 5/6	-	VGRSIL	0, M	MVFI	-	35 - 45	0.13

B-37 Obs. # ☒ Boring ☐ Pit Ground surface elev. 899.3 ft. Depth to limiting factor -66 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	7.5	10YR 2/2	-	SIL	2, VF, SBK	MFR		< 5	0.13
B	36	10YR 3/4	-	C	2, VF, SBK	MVFI		< 10	0.07
C	72	10YR 5/8	-	GRSL	0, M	MVFR		22.3	0.50
C	144	10YR 5/8	-	GRSCL	0, M	MFI - MVFI		15 - 25	0.11
C	168	10YR 6/6	-	VGRSIL	0, M	MVFI		35 - 45	0.13
C	210	10YR 5/8	-	VGRLS	0, SG	MLO		40 - 50	1.63

B-38 Obs. # ☒ Boring ☐ Pit Ground surface elev. 910.0 ft. Depth to limiting factor -228 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	6	10YR 2/2	-	L	2, VF, SBK	MFR	-	< 5	0.24
B	24	10YR 3/4	-	C	2, VF, SBK	MVFI	-	< 10	0.07
C	54	10YR 5/8	-	GRSCL	0, M	MFR	-	15 - 25	0.11
C	96	10YR 5/8	-	GRSICL	0, M	MFI	-	15 - 25	0.04
C	144	10YR 5/6 to 10YR 6/4	-	GRSCL	0, M	MFI - MVFI	-	15 - 30	0.11
C	168	10YR 5/1	-	GRSC	0, M	MVFI	-	15 - 20	0.04
C	228	10YR 6/1	-	GRSIL	0, M	MFR - MVFI	-	20 - 34	0.13

Property Owner KELLEN H WESSON Parcel ID # DELT0809996 Page 3 of 3

B-39 Obs. # ☒ Boring ☐ Pit Ground surface elev. 911.7 ft. Depth to limiting factor -24 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	5	10YR 2/2	-	SICL	2, VF, SBK	MFR	-	< 5	0.04
B	24	10YR 3/4	-	C	2, VF, SBK	MFI	-	< 10	0.07
C	57	10YR 6/4	m, 1, D, 10YR 6/1	SICL	0, M	MFI	-	5 - 14	0.04
C	96	10YR 5/8	-	GRSCL	0, M	MFI	-	15 - 25	0.11
C	144	10YR 6/4	-	GRSICL	0, M	MFI	-	15 - 25	0.04
C	168	10YR 5/1	-	SIC	0, M	MFI	-	10 -14	0.07
C	180	N 1/	-	S	0, SG	MLO	-	< 5	3.60
C	210	10YR 6/1	-	VGRSIL	0, M	MFR	-	35 - 45	0.13

☐ Obs. # ☐ Boring ☐ Pit Ground surface elev. _____ ft. Depth to limiting factor _____ in.

Horizon	Depth ft.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr

Test Results and/or Summary Comments

*All borings terminated on possible bedrock refusal.

**Depth to limiting layer determined based on shallowest groundwater level observed during/after drilling, or depth to top of bedrock refusal.

B-38: Topsoil thickness assumed (not measured).

Wis. Dept. of Safety and Professional Services
Division of Industry Services

SOIL EVALUATION - STORM

in accordance with SPS 382.365 and 385, Wis. Adm. Code

Attach complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent slope, scale or dimensions, north arrow, and BM referenced to nearest road.

Please print all information.

Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04 (1) (m)).

County: Waukesha

Parcel I.D.: DELT0811999

Reviewed by: J. Metzinger, E.I.T

Date: 04/24/2023

Property Owner: KELLEN H WESSON

Property Owner's Mailing Address: 11663 N BOBOLINK LN

City: MEQUON | State: WI | Zip Code: 53092 | Phone Number: ( )

Property Location

Govt. Lot | NE 1/4 SE 1/4 S 23 T 7 N R 18 ☑ E (or) ☐ W

Lot # | Block # | Subd. Name or CSM#

☐ City ☐ Village ☒ Town | Nearest Road: GOLF ROAD

DELAFIELD

Drainage area _____ ☐ sq. ft. ☐ acres

Optional:

Test Site Suitable for (check all that apply)

☐ Irrigation ☐ Bioretention trench ☐ Trench(es)

☐ Rain garden ☐ Grassed swale ☐ Reuse

☐ Infiltration trench ☐ SDS (> 15' wide) ☐ Other _____

Hydraulic Application Test Method:

☒ Morphological Evaluation

☐ Double-Ring Infiltrometer

☐ Other (specify) _____

B-17 Obs. # ☒ Boring ☐ Pit Ground surface elev. 925.0 ft. Depth to limiting factor -96 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	6	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	42	10YR 3/6	-	C	2, VF, SBK	MVFI	-	< 5	0.07
C	102	10YR 7/6	-	XGRLS	0, SG	MLO	-	70 - 85	1.63

B-18 Obs. # ☒ Boring ☐ Pit Ground surface elev. 931.2 ft. Depth to limiting factor -78 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	6	10YR 3/3	-	SIL	2, VF, SBK	MFR		< 5	0.13
B	36	10YR 3/6	-	C	2, VF, SBK	MFI		< 10	0.07
C	48	10YR 8/2	-	XGRS	0, SG	MLO		80 - 89	3.60
Cr	78	10YR 7/6	-	XGRLS	0, SG	MLO		70 - 85	1.63

CST/PSS Name (Please Print): Douglas Dettmers, PE

Signature

CST/PSS Number: 35060-6

Address: GESTRA Engineering, Inc. - 191 W. Edgerton Avenue, Milwaukee, WI 53207

Date Evaluation Conducted: 04/24/2023

Telephone Number: 414-933-7444

Property Owner KELLEN H WESSON Parcel ID # DELT0811999 Page 2 of 8

B-25 Obs. # ☒ Boring ☐ Pit Ground surface elev. 932.6 ft. Depth to limiting factor -84 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	7.5	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	48	10YR 3/6	-	CL	2, VF, SBK	MFI	-	< 5	0.03
C	96	10YR 4/4	-	VGRLS	0, SG	MLO	-	35 - 45	1.63
C	144	10YR 5/8	-	XGRS	0, SG	MLO	-	80 - 89	3.60

B-26 Obs. # ☒ Boring ☐ Pit Ground surface elev. 938.3 ft. Depth to limiting factor -60 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	8	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	48	10YR 4/6	-	CL	2, VF, SBK	MFI	-	< 10	0.03
C	84	10YR 5/6	-	SICL	0, M	MFI	-	< 5	0.04
C	120	10YR 5/6	-	GRSCL	0, M	MFR - MFI	-	15 - 25	0.11
C	156	10YR 5/8	-	GRSCL	0, M	MVFI	-	20 - 34	0.11
Cr	180	10YR 5/6	-	XGRS	0, SG	MLO	-	60 - 70	3.60
Cr	192	10YR 6/6	-	XGRLS	0, SG	MLO	-	65 - 85	1.63

B-27 Obs. # ☒ Boring ☐ Pit Ground surface elev. 939.0 ft. Depth to limiting factor -120 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	13	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	19	10YR 4/6	-	SC	2, VF, SBK	MFI	-	< 10	0.04
C	78	10YR 5/6	f, 1, P, 10YR 6/1	SICL	0, M	MFI	-	< 5	0.04
C	138	10YR 5/6	-	GRSCL	0, M	MFI	-	15 - 25	0.11
C	168	10YR 5/8	-	GR	0, SG	MLO	-	> 90	3.60
C	180	10YR 5/4	-	XGRCL	0, SG	MLO	-	70 - 85	0.03

Property Owner KELLEN H WESSON Parcel ID # DELT0811999 Page 3 of 8

B-29 Obs. # ☒ Boring ☐ Pit Ground surface elev. 946.1 ft. Depth to limiting factor -156 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	9	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	24	10YR 3/6	-	CL	2, VF, SBK	MFI	-	< 5	0.03
C	48	10YR 4/6	-	GRSCL	0, M	MFI	-	15 - 20	0.11
C	84	10YR 6/4	-	GRSL	0, M	MFR	-	15 - 20	0.50
C	108	10YR 5/6	-	VGRLS	0, SG	MLO	-	35 - 45	1.63
C	144	10YR 5/8	-	S	0, SG	MLO	-	< 5	3.60
C	204	10YR 5/8	-	L	0, M	MFR	-	< 10	0.24
Cr	240	10YR 7/4	-	GR	0, SG	MLO	-	< 90	3.60

B-30 Obs. # ☒ Boring ☐ Pit Ground surface elev. 948.5 ft. Depth to limiting factor -156 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	24	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	48	10YR 3/6	c, 1, P, 10YR 3/3	C	2, VF, SBK	MFI	-	< 10	0.07
C	84	10YR 5/8	-	GRSCL	0, M	MFI	-	15 - 34	0.11
C	108	10YR 5/8	-	VGRS	0, SG	MLO	-	35 - 45	3.60
Cr	156	10YR 7/2	-	XGRS	0, SG	MLO	-	75 - 89	3.60

B-33 Obs. # ☒ Boring ☐ Pit Ground surface elev. 924.1 ft. Depth to limiting factor -24 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	6	10YR 2/2	-	L	2, VF, SBK	MFR	-	< 5	0.24
B/FILL	24	10YR 3/4	-	C	2, VF, PL	MFI	-	< 10	0.07
B/FILL	29	10YR 3/3	-	GRSC	2, VF, SBK	MFI	-	14 - 20	0.04
C	125	10YR 5/6	-	GRSL	0, M	MFR	-	23.8	0.50
Cg	204	5G 5/1	c, 2, D, 2.5Y 4/2	SICL	0, M	DEH	-	5 - 10	0.04

B-34 Obs. # ☒ Boring ☐ Pit Ground surface elev. 929.6 ft. Depth to limiting factor -36 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	5	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	30	10YR 3/4	-	C	2, VF, SBK	MVFI	-	< 10	0.07
C	132*	10YR 5/6	-	VGRSL	0, M	MFR	-	35 - 55	0.50
	*With 10YR 2/1 gravel layer at 126 inches								

B-7 Obs. # ☒ Boring ☐ Pit Ground surface elev. 916.2 ft. Depth to limiting factor -4.8 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 2/1	-	SICL	2, VF, SBK	MFR	-	< 5	0.04
B	24	10YR 5/3	f, 1, D, 10YR 4/6	SICL	2, VF, SBK	MFR	-	< 10	0.04
C	48	10YR 6/6	-	GRSCL	0, M	MFR	-	15 - 30	0.11
C	96	10YR 6/4	c, 1, D, 10YR 6/1	VGRSCL	0, M	MFR	-	35 - 45	0.11
C	114	10YR 6/2	-	XGRLS	0, SG	MLO	-	75 - 84	1.63

B-15 Obs. # ☒ Boring ☐ Pit Ground surface elev. 926.8 ft. Depth to limiting factor -114 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	48	10YR 3/4	-	CL	2, VF, SBK	MFI	-	< 10	0.03
C	72	10YR 5/8	-	GRSCL	0, M	MFR	-	20 - 30	0.11
C	78	10YR 2/2	-	VGRS	0, SG	MLO	-	35 - 40	3.60
C	114	10YR 5/6	-	GRSIL	0, SG	MLO	-	15 - 25	0.13

Property Owner KELLEN H WESSON Parcel ID # DELT0811999 Page 5 of 8

B-16 Obs. # ☒ Boring ☐ Pit Ground surface elev. 930.5 ft. Depth to limiting factor -90 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	9	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	48	10YR 3/4	-	CL	2, VF, SBK	MFI	-	< 10	0.03
C	72	10YR 5/8	-	GRSCL	0, M	MFR	-	15 - 25	0.11
C	102	10YR 5/8	-	VGRLS	0, SG	MLO	-	40 - 55	1.63

B-19 Obs. # ☒ Boring ☐ Pit Ground surface elev. 934.9 ft. Depth to limiting factor -114 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	9	10YR 3/3	-	SICL	2, VF, SBK	MFI	-	< 5	0.04
B	36	10YR 5/4	-	SC	2, VF, SBK	MVFI	-	< 5	0.04
C	56	10YR 5/6	-	S	0, SG	MLO	-	< 5	3.60
C	114	10YR 5/6	-	GRSCL	0, M	MEF	-	15 - 25	0.11

B-20 Obs. # ☒ Boring ☐ Pit Ground surface elev. 925.6 ft. Depth to limiting factor -78 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	9	10YR 2/1	-	SIL	2, VF, SBK	MFR	-	< 10	0.13
B	24	10YR 3/4	f, 1, D, 10YR 2/1	C	2, VF, SBK	MVFI	-	< 10	0.07
B	48	10YR 4/3	c, 1, D, 10YR 7/1	SIC	2, VF, SBK	MFR	-	5 - 14	0.07
C	78	10YR 5/8	c, 1, P, 10YR 6/2	SIC	0, M	MFR	-	< 10	0.07

B-23 Obs. # ☒ Boring ☐ Pit Ground surface elev. 940.9 ft. Depth to limiting factor -126 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	48	10YR 3/6	-	GRL	2, VF, SBK	MFI	-	15 - 30	0.24
C	72	10YR 5/8	-	VGRLS	0, SG	MVFR	-	35 -45	1.63
C	96	10YR 5/6	-	VGRS	0, SG	MLO	-	35 - 45	3.60
C	126	10YR 5/6	-	VGRLS	0, SG	MVFR	-	40 - 50	1.63

B-24 Obs. # ☒ Boring ☐ Pit Ground surface elev. 940.7 ft. Depth to limiting factor -10.5 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	8	10YR 3/3	-	L	2, VF, SBK	MFR	-	< 5	0.24
C	24	10YR 7/4	-	XGRS	0, SG	MLO	-	70 - 85	3.60
C	84	10YR 5/6	-	GRSCL	0, M	MFI	-	15 - 30	0.11
C	126	10YR 5/8	-	VGRSICL	0, M	MVFI	-	35 - 45	0.04

B-28 Obs. # ☒ Boring ☐ Pit Ground surface elev. 943.4 ft. Depth to limiting factor -144 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	48	10YR 3/4	-	C	2, VF, SBK	MFI	-	5 - 14	0.07
C	66	10YR 5/8	-	VGRSL	0, M	MFR	-	51.9	0.50
C	96	10YR 5/8	-	XGRS	0, SG	MLO	-	70 - 80	3.60
C	144	10YR 5/8	-	VGRS	0, SG	MLO	-	40 - 59	3.60
C	168	10YR 5/4	-	XGRLS	0, SG	MLO	-	80 - 89	1.63
C	193	10YR 4/4	-	VGRSCL	0, M	MVFI	-	45 - 55	0.11

B-31 Obs. # ☒ Boring ☐ Pit Ground surface elev. 939.7 ft. Depth to limiting factor -96 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	10	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	52	10YR 3/6	-	SICL	2, VF, SBK	MFI	-	< 5	0.04
C	132	10YR 5/8	-	GRSIL	0, M	MFR - MFI	-	15 - 25	0.13
Cr	180	10YR 7/4	-	XGRSL	0, SG	MLO	-	75 - 85	0.50

B-32 Obs. # ☒ Boring ☐ Pit Ground surface elev. 939.7 ft. Depth to limiting factor -96 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	8	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	36	10YR 3/6	-	SICL	2, VF, SBK	MFI	-	< 10	0.04
C	84	10YR 6/4	-	GRSCL	0, M	MFR	-	15 - 25	0.11
C	96	10YR 8/2	-	XGRS	0, SG	MLO	-	60 - 75	3.60
C	120	10YR 6/6	-	XGRLS	0, SG	MLO	-	60 - 75	1.63
C	144	10YR 6/6	-	XGRSICL	0, M	MFR	-	60 - 75	0.04
Cr	192	10YR 6/6	-	XGRLS	0, SG	MLO	-	70 - 85	1.63

B-35 Obs. # ☒ Boring ☐ Pit Ground surface elev. 937.8 ft. Depth to limiting factor -108 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr
A	9	10YR 3/3	-	SIL	2, VF, SBK	MFR	-	< 5	0.13
B	24	10YR 3/6	-	SIC	2, VF, SBK	MFI	-	< 10	0.07
C	48	10YR 3/4	-	SC	0, M	MFR	-	10 - 14	0.04
C	84	10YR 5/8	-	GRSCL	0, M	MFR	-	15 - 25	0.11
C	102	10YR 6/6	-	VGRS	0, SG	MLO	-	40 - 55	3.60
C	144	10YR 7/6	-	XGRS	0, SG	MLO	-	70 - 80	3.60
C	156	10YR 4/6	-	VGRSCL	0, M	MLO	-	70 - 80	0.11

Obs. # ☐ Boring ☐ Pit Ground surface elev. _____ ft. Depth to limiting factor _____ in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr

Obs. # ☐ Boring ☐ Pit Ground surface elev. _____ ft. Depth to limiting factor _____ in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frag.	Hydraulic App. Rate Inches/Hr

Test Results and/or Summary Comments

*All borings terminated on possible bedrock refusal.

**Depth to limiting layer determined based on shallowest groundwater level observed during/after drilling, or depth to top of bedrock refusal.

GENERAL NOTES

DRILLING AND SAMPLING SYMBOLS

SYMBOL	DEFINITION
HSA	Hollow Stem Auger
HSA w/ RW	Hollow Stem Auger converted to Rotary Wash Boring (initiated with Mudding Fluid)
SS	2" O.D. Split Spoon Sample – (ASTM D 1586)
SH	3" Thin-Walled Tube Sample (Shelby Tube) – (ASTM D 1587)
AU	Solid Stem Auger Sample
CA	Modified California Sample – (ASTM D 3550)
RC	Rock Core Sample – (ASTM D 2113)
HA	Hand Auger Sample
GB	Grab Bag Sample
R	SPT Refusal (N-value of 50 blows for less than 6 inches of penetration)
NMR	No Measurement Recorded
NE	Not Encountered

TEST SYMBOLS

SYMBOL	DEFINITION
MC	Moisture Content (%) – (ASTM D 2216)
LOI	Organic Content (Loss on Ignition) (%) – (ASTM D 2974)
Qp	Hand Penetrometer Reading (tsf)
Qu	Unconfined Comp. Strength (tsf) – (ASTM D 2166)
γ_d	Dry Density (pcf) – (ASTM D 7263)
γ_T	Total (Moist) Density (pcf)
LL, PL	Liquid and Plastic Limit (%) – (ASTM D 4318)
PI	Plasticity Index (%)
P200	Percent passing the #200 Sieve – (ASTM D 1140)
Ts	Hand Torvane Reading (tsf)
SG	Specific Gravity – (ASTM D854)
pH	Hydrogen Ion Content – (ASTM D4972)
RQD	Rock Quality Designation (%) – (ASTM D6032)

WATER LEVEL

Water levels shown on the boring logs are the levels measured in the borings at the time and under the conditions indicated. In some soils, it may not be possible to determine the groundwater level within the normal time required for test borings and an extended period of time may be necessary to reach equilibrium. Therefore, the position of the water level symbol may not indicate the true level of the groundwater table. Perched water refers to water above an impervious layer, thus impeded in reaching the water table. The available water level information is given at the bottom of the respective boring log sheet.

DESCRIPTIVE TERMINOLOGY

DENSITY TERM	SPT N-VALUE
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Over 50

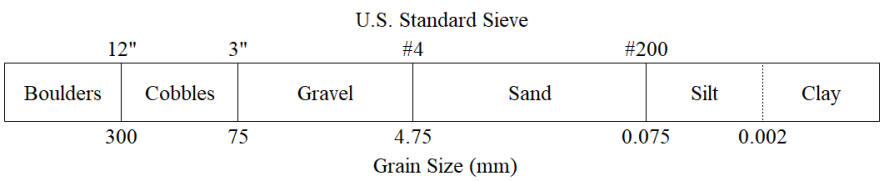
CONSISTENCY TERM	Unconfined Compressive Strength, (tsf)	SPT N-VALUE
Very Soft	<0.25	0 - 2
Soft	0.25 - 0.49	2 - 4
Medium Stiff	0.50 - 0.99	4 - 8
Stiff	1.00 - 1.99	8 - 16
Very Stiff	2.00 - 3.99	16 - 30
Hard	4.0+	Over 30

Lamination	Up to 1/2" thick horizontal stratum
Layer	1/2" thick or greater horizontal stratum
Lens	1/2" to 6" discontinuous horizontal stratum
Varved	Alternating laminations
Dry	Powdery, dusty
Moist	Damp, below saturation
Wet	Saturated, above liquid limit

Standard Penetration Test N-Value: Blows per Foot of a 140 Pound Hammer Falling 30 inches on a 2-inch OD Split Barrel Sampler

Note: If unconfined compressive strength data is not available, then N-value should be used to describe consistency term

RELATIVE SIZES



SOILS CLASSIFICATION FOR ENGINEERING PURPOSES

ASTM Designation: D 2487 - 83

(Based on Unified Soil Classification System)

SOIL ENGINEERING

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]					Soil Classification[B] Group Symbol	Group Name
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines[C]	Cu ≥ 4 and 1≤ Cc ≤ 3[E]		GW	Well-graded gravel[F]
			Cu < 4 and/or 1 > Cc > 3[E]		GP	Poorly-graded gravel[F]
		Gravels with Fines more than 12% fines[C]	Fines Classify as ML or MH		GM	Silty gravel[F.G.]
			Fines classify as CL or CH		GC	Clayey gravel[F.G.]
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean sands Less than 5% fines[D]	Cu ≥ 6 and 1 ≤ Cc ≤ 3[E]		SW	Well-graded sand[H]
			Cu < 6 and/or 1 > Cc > 3[E]		SP	Poorly-graded sand[H]
		Sands with Fines more than 12% fines[D]	Fines Classify as ML or MH		SM	Silty sand[G.H]
			Fines classify as CL or CH		SC	Clayey sand[G.H]
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid Limit less than 50	Inorganic	PI > 7 and plots on or above " A" line[I]		CL	Lean clay[J.K.L]
			PI < 4 or plots below " A " line[I]		ML	Silt[J.K.L]
		Organic	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OL	Organic clay[J.K.L.M] Organic Silt[J.K.L.N]
	Silts and Clays Liquid Limit 50 or more	Inorganic	PI plots on or above " A " line		CH	Fat clay[J.K.L]
			PI plots below " A " line		MH	Elastic silt[J.K.L]
		Organic	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OH	Organic clay[J.K.L.O] Organic Silt[J.K.L.P]
Highly organic soils		Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-in (75- mm) sieve

[B] If field sample contained cobbles or boulders, or both, add with cobbles and/or boulders after group name

[C] Gravels with 5 to 12 % fines require dual symbols:
GW - GM (well-graded gravel with silt)
GW - GC (well-graded gravel with clay)
GP - GM (poorly-graded gravel with silt)
GP - GC (poorly-graded gravel with clay)

[D] Sands with 5 to 12 % fines require dual symbols:
SW -SM (well-graded sand with silt)
SW - SC (well-graded sand with clay)
SP - SM (poorly-graded sand with silt)
SP - SC (poorly-graded sand with clay)

[E] $Cu = \frac{D_{60}}{D_{10}}$ $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" after group name

[G] If fines classify as CL-ML, use dual symbol GC-GM. or SC-SM

[H] If soil contains ≥ 15% gravel, add "with gravel" after group name.

[I] If Atterberg limits plot in hatched area, soil is a CL-ML (silty clay)

[J] If soil contains 15 to 29% plus No. 200, add, "with sand" or " with gravel", whichever is predominant

[K] If soil contains ≥ 30% plus No.200, and predominantly sand, add "sandy" before the group name

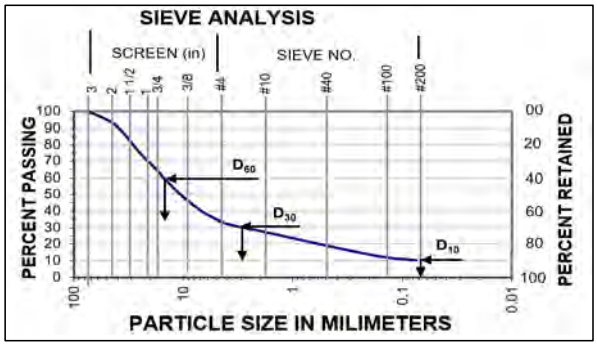
[L] If soil contains ≥ 30% plus No.200, and predominantly gravel, add "gravelly" before the group name

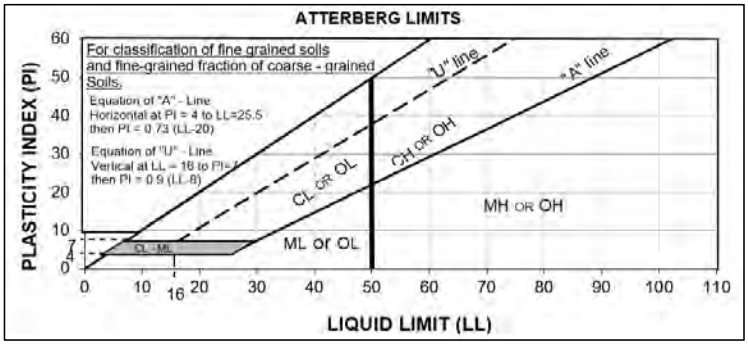
[M] PI ≥ 4 and plots on or above "A" Line

[N] PI < 4 or plots below "A" Line

[O] PI plots on or above "A" Line

[P] PI plots below "A" Line





SOILS CLASSIFICATION FOR ENGINEERING PURPOSES

(Based on United States Department of Agriculture - Natural Resources Conservations Service)

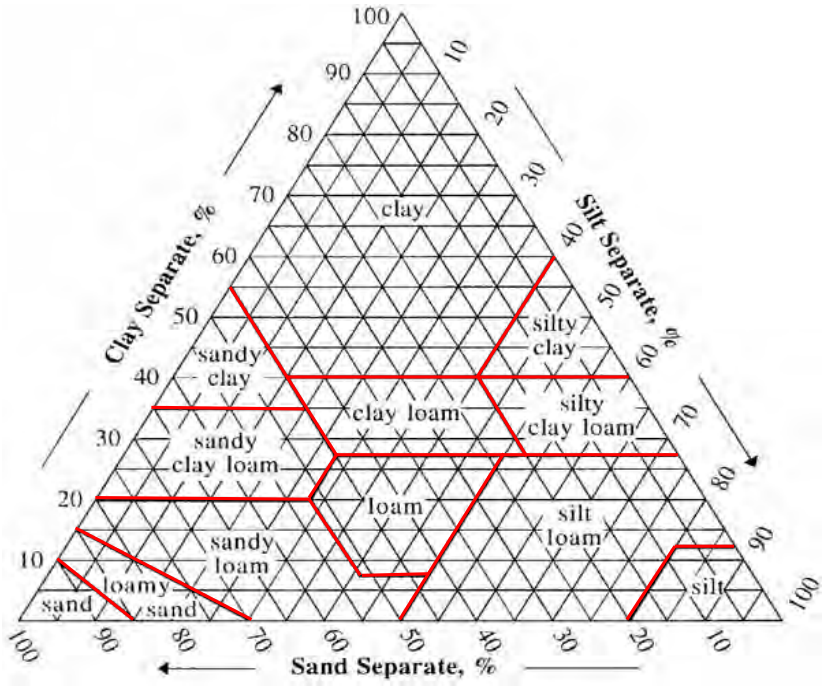
SOIL ENGINEERING

Criteria for Soil Classification Based on Particle Size Distribution [A]

		U.S. Standard Sieve No.	USDA Soil Name Classification
ROCK FRAGMENTS		> 25"	Boulders
		10" < 25"	Stones
		3" < 10"	Cobbles
		3/4" < 3"	Coarse Gravel
		#4 < 3/4"	Medium Gravel
		#10 < #4	Fine Gravel
FINE EARTH	Sand	#18 < #10	Very Coarse Sand
		#35 < #18	Coarse Sand
		#60 < #35	Medium Sand
		#140 < #60	Fine Sand
		#300 < #140	Very Fine Sand
	Silt	0.02 mm < 0.05 mm	Coarse Silt
		0.002 mm < 0.02 mm	Fine Silt
	Clay	0.0002 mm < 0.002 mm	Coarse Clay
		< 0.0002 mm	Fine Clay

(Soil) Textural Triangle: [B]

Fine Earth Texture Classes (—)



Texture Classes [C]	Code
Coarse Sand	COS
Sand	S
Fine Sand	FS
Very Fine Sand	VFS
Loamy Coarse Sand	LCOS
Loamy Sand	LS
Loamy Fine Sand	LFS
Loamy Very Fine Sand	LVFS
Coarse Sandy Loam	COSL
Sandy Loam	SL
Fine Sandy Loam	FSL
Very Fine Sandy Loam	VFSL
Loam	L
Silt Loam	SIL
Silt	SI
Sandy Clay Loam	SCL
Clay Loam	CL
Silty Clay Loam	SICL
Sandy Clay	SC
Silty Clay	SIC
Clay	C

Rock Fragment Texture Modifiers [B]	Vol. %
None	< 15
Size Adjective (i.e. Gravelly)	15 to < 35
Very (Size Adjective)	35 to < 60
Extremely (Size Adjective)	60 to < 90
Fragment Size Class Name	≥ 90

A Based on page 2-45 of Field Book for Describing and Sampling Soils V3.0

B Based on page 2-38 of Field Book for Describing and Sampling Soils V3.0

C Based on page 2-37 of Field Book for Describing and Sampling Soils V3.0

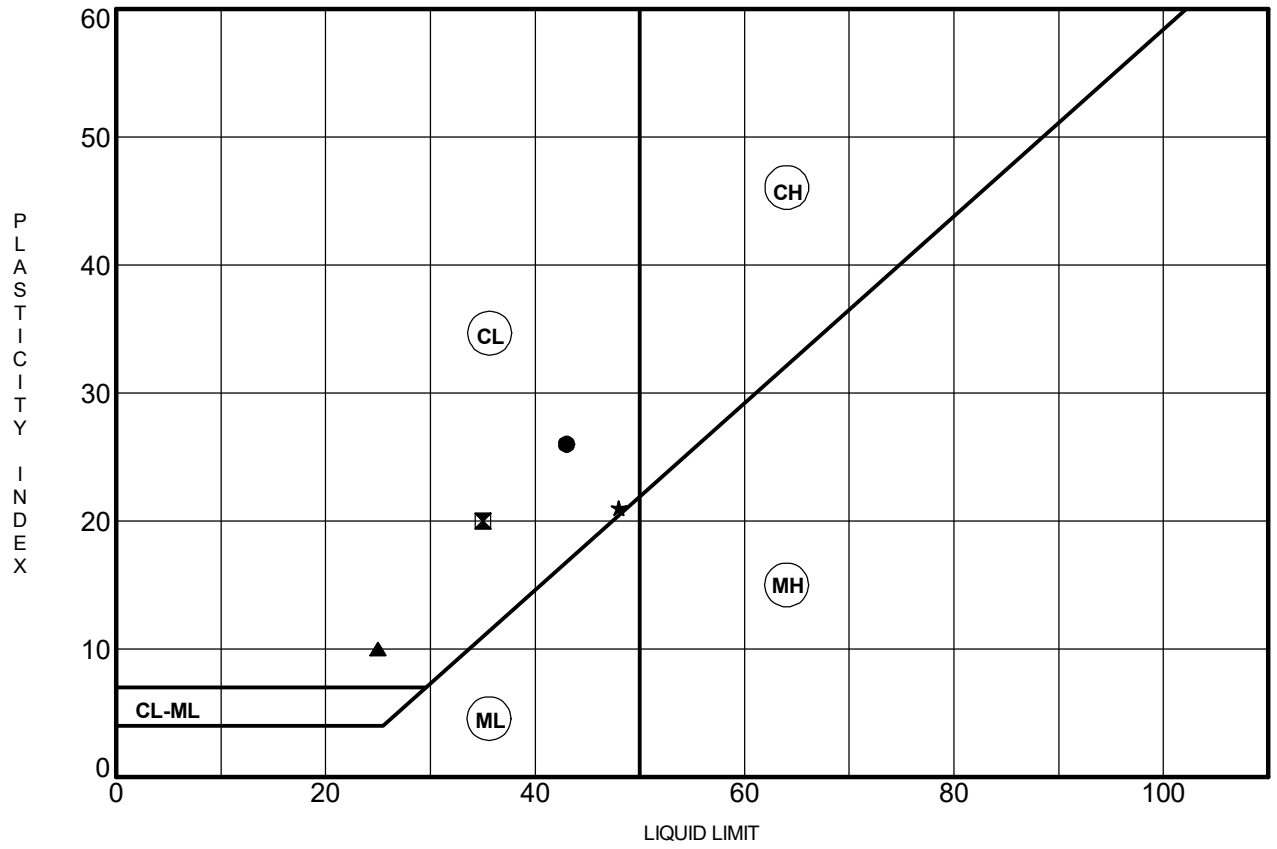
APPENDIX II

LABORATORY TEST RESULTS

GESTRA Engineering, Inc
191 W. Edgerton Avenue
Milwaukee, WI 53207
Phone: (414) 933-7444, Fax: (414) 933-7844

LABORATORY TEST RESULTS
ATTERBERG LIMITS RESULTS (ASTM D4318)

Project Name: Thomas Farms Development
Project Number: 23083-10
Project Location: Delafield, Wisconsin



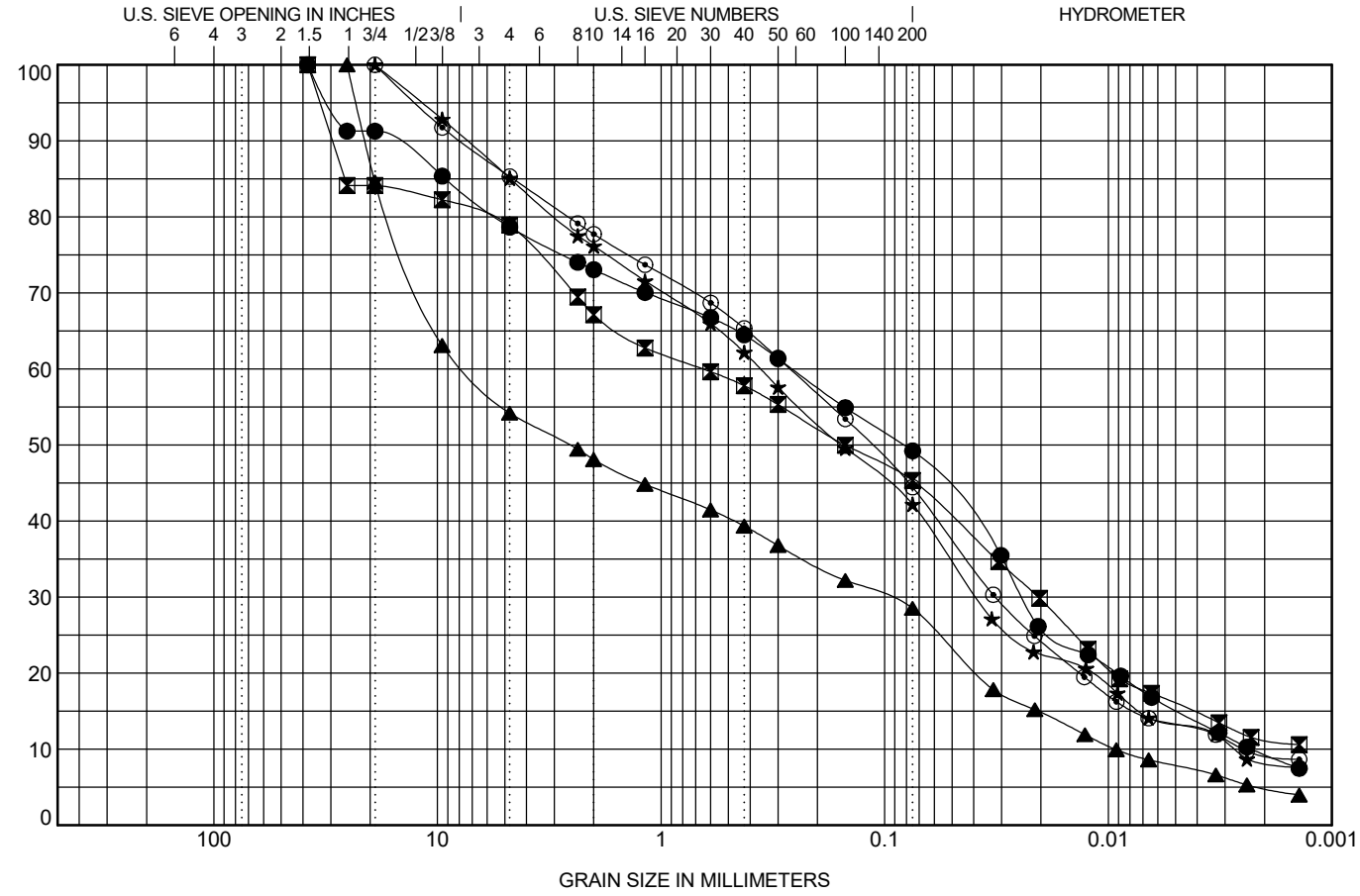
Unless otherwise noted, Atterberg limit sample was air-dried, Liquid limit was performed using mutiple points, and plastic limit test was hand rolled.

	Specimen Identification		LL	PL	PI	Fines	MC	Notes
●	B-2, SS-1	0'-2'	43	17	26		22.6	
⊠	B-20, SS-2	2'-4'	35	15	20		22.1	
▲	B-27, SS-2	2'-4'	25	15	10		18.9	
★	B-8, SS-1	0'-2'	48	27	21		21.7	

GESTRA Engineering, Inc
191 W. Edgerton Avenue
Milwaukee, WI 53207
Phone: (414) 933-7444, Fax: (414) 933-7844

LABORATORY TEST RESULTS
GRAIN SIZE DISTRIBUTION (ASTM D6913 and D7928)

Project Name: Thomas Farms Development
Project Number: 23083-10
Project Location: Delafield, Wisconsin



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Classification	LL	PL	PI	Cc	Cu
● B-1, SS-2	2'-4'					0.99	113.66
⊠ B-22, SS-3	4'-6'						
▲ B-28, SS-3	4'-6'					0.14	802.28
★ B-33, SS-4	6'-8'					1.53	131.83
⊙ B-37, SS-2	2'-4'					1.54	106.25

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-1, SS-2	2'-4'	38.1	0.259	0.024	0.002	21.3	29.4	34.1	15.1
⊠ B-22, SS-3	4'-6'	38.1	0.65	0.021		21.1	33.6	29.4	16.0
▲ B-28, SS-3	4'-6'	25.4	7.489	0.099	0.009	45.8	25.7	20.7	7.8
★ B-33, SS-4	6'-8'	19.05	0.36	0.039	0.003	14.9	42.9	29.0	13.2
⊙ B-37, SS-2	2'-4'	19.05	0.265	0.032	0.002	14.7	40.8	31.3	13.2

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LABORATORY TEST RESULTS
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Project Name: Thomas Farms Development
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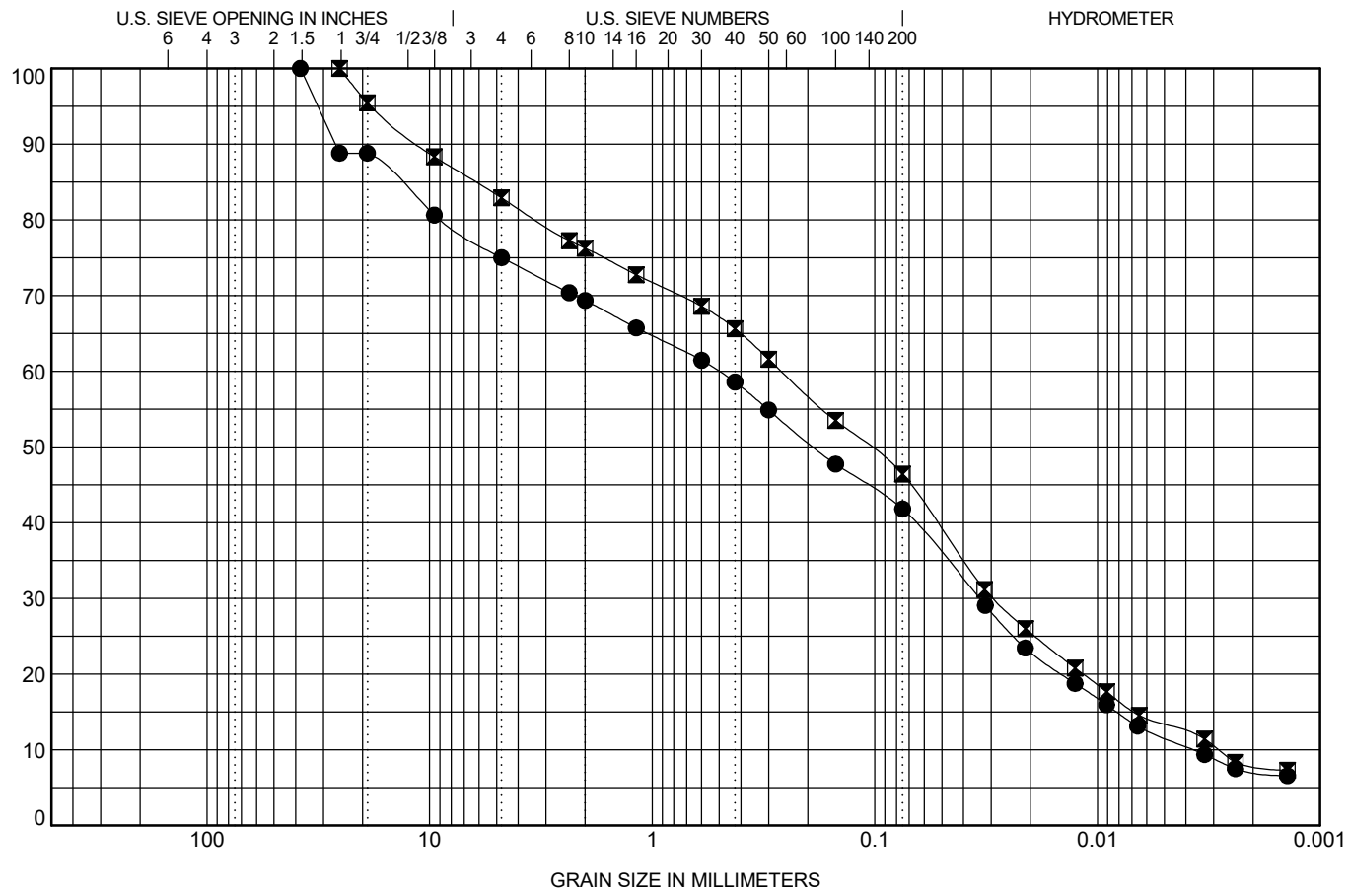

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	B-6, SS-2	2'-4'					0.62	136.10
⊠	B-9, SS-3	4'-6'					1.14	91.81

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-6, SS-2	2'-4'	38.1	0.504	0.034	0.004	25.0	33.2	30.2	11.6
⊠	B-9, SS-3	4'-6'	25.4	0.262	0.029	0.003	17.1	36.5	33.1	13.3

GRAIN SIZE - GINT STD US LAB.GDT - 5/5/23 12:56 - T:\PROJECTS\2023\MILWAUKEE - 10 (GEOTECH)\23083-10 DD (THOMAS FARM DEVELOPMENT)\LOGS\THOMAS FARMS DEVELOPMENT_2023-04-11.GPJ

1 OVERALL LANDSCAPE PLAN

1" = 150'-0"

0 150 300 450 600 feet

1" = 150'

NORTH

LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR PHASING OF LANDSCAPE PLAN.
2. TREES NOT TO BE PLANTED WITHIN 5' FROM FIRE HYDRANTS, CONTRACTOR TO CONFIRM TREE LOCATIONS IN FIELD.
3. TREES NOT TO BE PLANTED WITHIN 5' OF BURIED OR OVERHEAD UTILITIES, CONTRACTOR TO CONFIRM TREE LOCATIONS IN FIELD.
4. CONTRACTOR TO FIELD VERIFY ALL PLANT & MATERIAL QUANTITIES TO MEET INTENT OF DRAWING. PLANT / REFERENCE NOTES SCHEDULE ARE GUIDES FOR PLANNING PURPOSES.

PRELIMINARY

SHEET INVENTORY

project no. 23-005

Landscape Architect

Kyle Brusveen

date 2023-03-27

By: Neumann Developments Inc.
N27W24025 Paul Court, Suite 100
Pewaukee, WI 53072

Welshire Farm

Single Family Residential Development
Town of Delafield, Wisconsin 53018

revisions:

814 Sylvia
Grand Rapids, MI 49504
telephone: 210.420.2630
web: ekbdesignworks.com

development documents

L-1

OVERALL LANDSCAPE PLAN

GLEN COVE ROAD

ENLARGED LANDSCAPE PLAN; SEE 6/L-6

ENLARGED LANDSCAPE PLAN; SEE 5/L-6

GOLF ROAD

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME
	ACER SACCHARUM / SUGAR MAPLE
	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / AUTUMN BRILLIANCE SERVICEBERRY
	BETULA PAPYRIFERA `RENCI` TM / RENAISSANCE REFLECTION PAPER BIRCH
	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST
	JUGLANS NIGRA / BLACK WALNUT
	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR
	MALUS X `ADAMS` / ADAMS CRABAPPLE
	PICEA ABIES / NORWAY SPRUCE
	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE
	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE
	PINUS STROBUS / WHITE PINE
	QUERCUS ALBA / WHITE OAK
	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK
	SORBUS DECORA / SHOWY MOUNTAIN ASH
	TILIA AMERICANA `MCKSENTRY` / AMERICAN SENTRY LINDEN
	TILIA CORDATA `GREENSPIRE` / GREENSPIRE LINDEN
	ULMUS AMERICANA `VALLEY FORGE` / AMERICAN ELM

PRELIMINARY

NORTH

1 ENLARGED LANDSCAPE PLAN

1" = 50'-0"

0 50 100 150 200 feet

1" = 50'

project no. 23-005

Landscape Architect

Kyle Brusveen

date 2023-03-27

By: Neumann Developments Inc.
N27W24025 Paul Court, Suite 100
Pewaukee, WI 53072

Welshire Farm

Single Family Residential Development
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revisions:

814 Sylvia
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web: ekbdesignworks.com

development documents

L-2

ENLARGED LANDSCAPE PLAN

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME
	ACER SACCHARUM / SUGAR MAPLE
	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / AUTUMN BRILLIANCE SERVICEBERRY
	BETULA PAPYRIFERA `RENCI` TM / RENAISSANCE REFLECTION PAPER BIRCH
	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST
	JUGLANS NIGRA / BLACK WALNUT
	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR
	MALUS X `ADAMS` / ADAMS CRABAPPLE
	PICEA ABIES / NORWAY SPRUCE
	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE
	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE
	PINUS STROBUS / WHITE PINE
	QUERCUS ALBA / WHITE OAK
	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK
	SORBUS DECORA / SHOWY MOUNTAIN ASH
	TILIA AMERICANA `MCKSENTRY` / AMERICAN SENTRY LINDEN
	TILIA CORDATA `GREENSPIRE` / GREENSPIRE LINDEN
	ULMUS AMERICANA `VALLEY FORGE` / AMERICAN ELM

PRELIMINARY

NORTH

1 ENLARGED LANDSCAPE PLAN
1" = 50'-0"

0 50 100 150 200 feet

1" = 50'

project no. 23-005

Landscape Architect

Kyle Brusveen

date 2023-03-27

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N27W24025 Paul Court, Suite 100
Pewaukee, WI 53072

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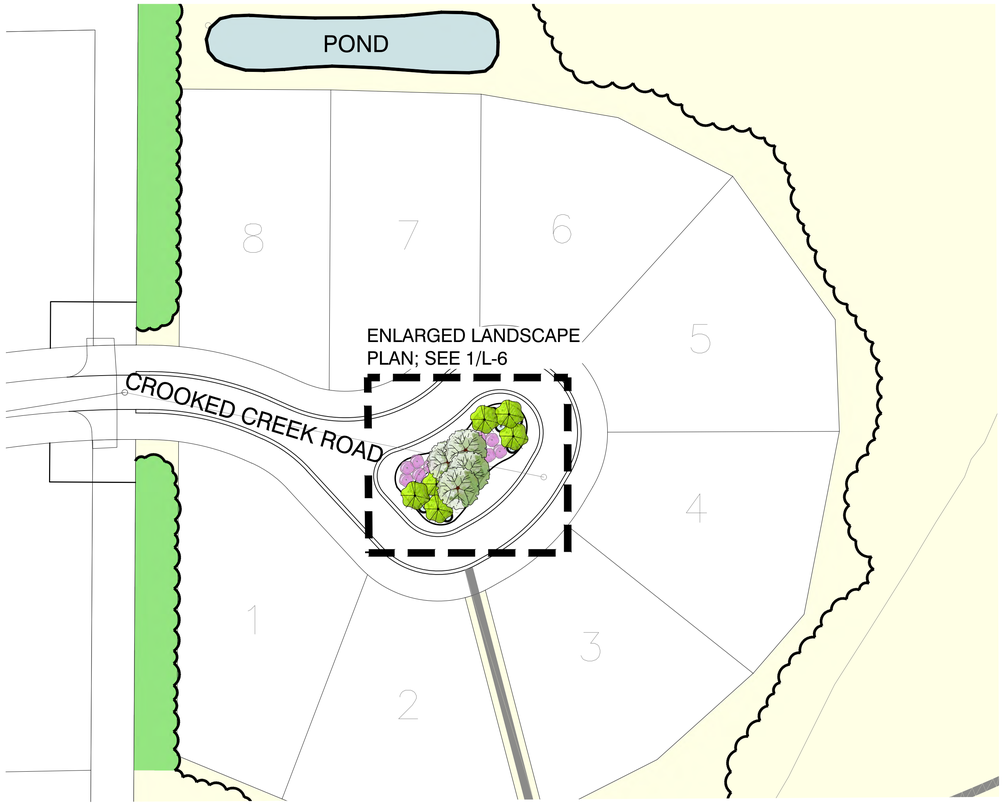
L-3

ENLARGED LANDSCAPE PLAN



1 ENLARGED LANDSCAPE PLAN

1" = 50'-0"

0 50 100 150 200 feet

1" = 50'

NORTH

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME
	ACER SACCHARUM / SUGAR MAPLE
	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / AUTUMN BRILLIANCE SERVICEBERRY
	BETULA PAPYRIFERA `RENCI` TM / RENAISSANCE REFLECTION PAPER BIRCH
	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST
	JUGLANS NIGRA / BLACK WALNUT
	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR
	MALUS X `ADAMS` / ADAMS CRABAPPLE
	PICEA ABIES / NORWAY SPRUCE
	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE
	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE
	PINUS STROBUS / WHITE PINE
	QUERCUS ALBA / WHITE OAK
	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK
	SORBUS DECORA / SHOWY MOUNTAIN ASH
	TILIA AMERICANA `MCKSENTRY` / AMERICAN SENTRY LINDEN
	TILIA CORDATA `GREENSPIRE` / GREENSPIRE LINDEN
	ULMUS AMERICANA `VALLEY FORGE` / AMERICAN ELM

PRELIMINARY

2 ENLARGED LANDSCAPE PLAN

1" = 50'-0"

0 50 100 150 200 feet

1" = 50'

NORTH

project no. 23-005

Landscape Architect

Kyle Brusveen

date 2023-03-27

By: Neumann Developments Inc.
N27W24025 Paul Court, Suite 100
Pewaukee, WI 53072

Welshire Farm

Single Family Residential Development
Town of Delafield, Wisconsin 53018

revisions:

814 Sylvia
Grand Rapids, MI 49504
telephone: 210.420.2630
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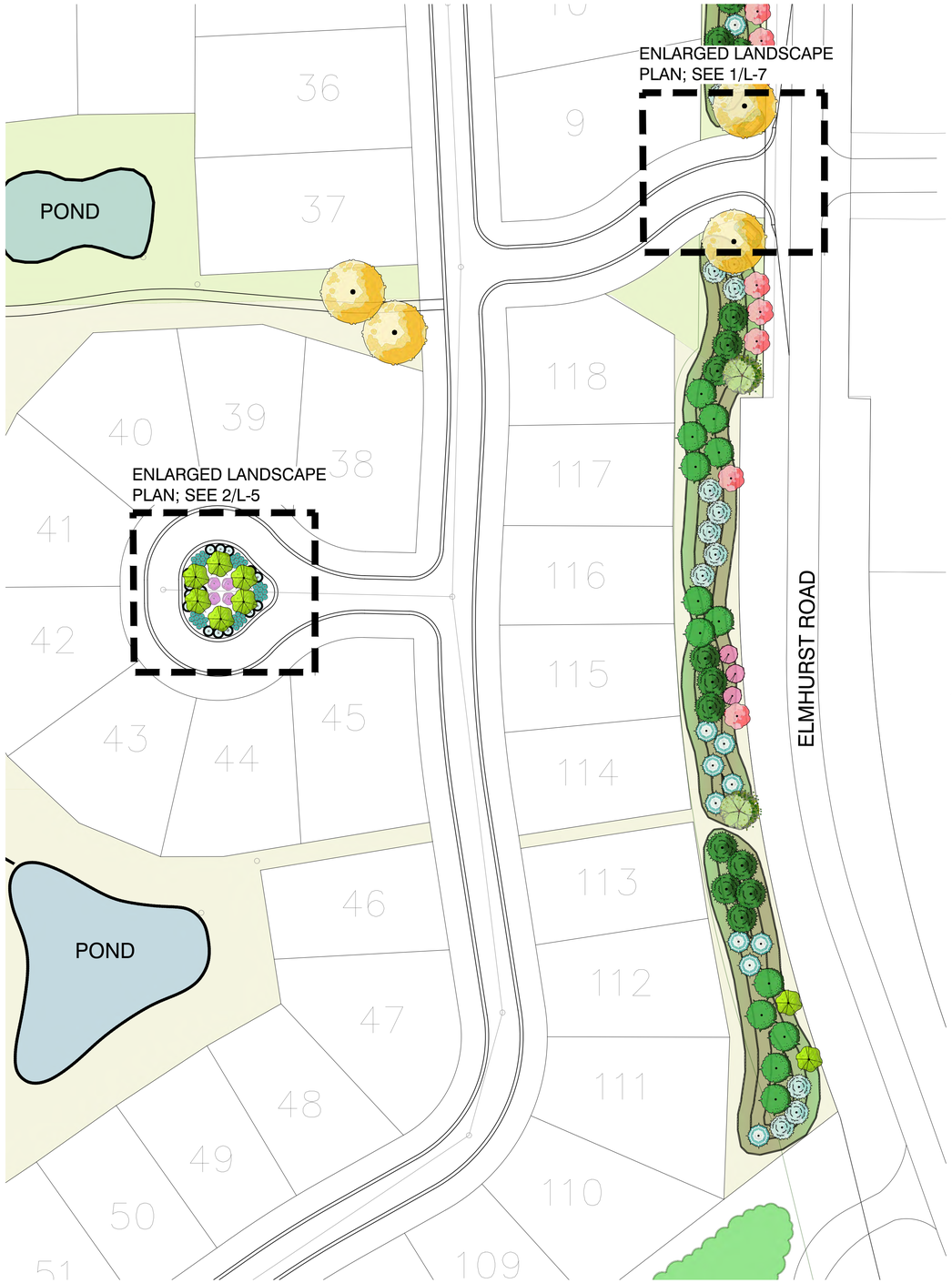
L-4

ENLARGED LANDSCAPE PLAN



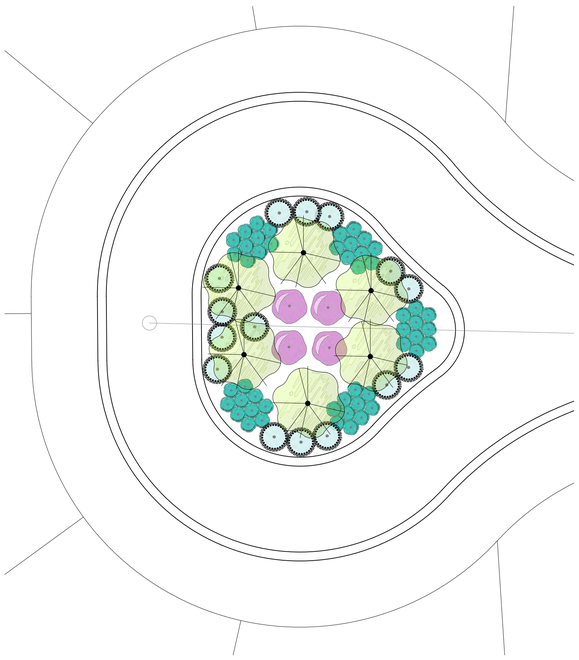
1 ENLARGED LANDSCAPE PLAN

1" = 50'-0"

0 50 100 150 200 feet

1" = 50'

NORTH



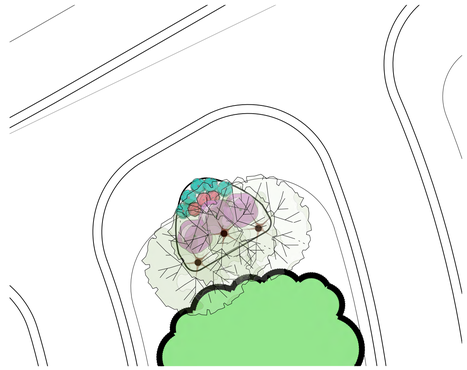
2 ENLARGED LANDSCAPE PLAN

1" = 20'-0"

0 20 40 60 80 feet

1" = 20'

NORTH



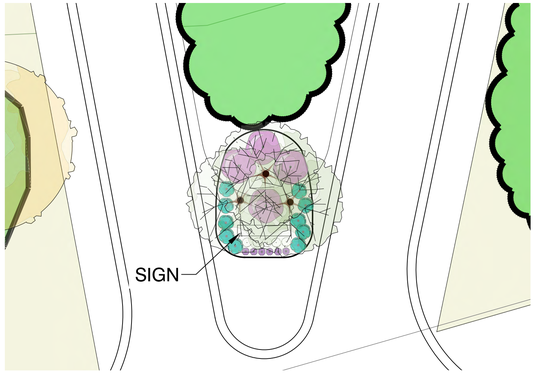
3 ENLARGED LANDSCAPE PLAN

1" = 50'-0"

0 50 100 150 200 feet

1" = 50'

NORTH



4 ENLARGED LANDSCAPE PLAN

1" = 50'-0"

0 50 100 150 200 feet

1" = 50'

NORTH

PRELIMINARY

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME
	ACER SACCHARUM / SUGAR MAPLE
	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / AUTUMN BRILLIANCE SERVICEBERRY
	BETULA PAPYRIFERA `RENCI` TM / RENAISSANCE REFLECTION PAPER BIRCH
	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST
	JUGLANS NIGRA / BLACK WALNUT
	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR
	MALUS X `ADAMS` / ADAMS CRABAPPLE
	PICEA ABIES / NORWAY SPRUCE
	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE
	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE
	PINUS STROBUS / WHITE PINE
	QUERCUS ALBA / WHITE OAK
	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK
	SORBUS DECORA / SHOWY MOUNTAIN ASH
	TILIA AMERICANA `MCKSENTRY` / AMERICAN SENTRY LINDEN
	TILIA CORDATA `GREENSPIRE` / GREENSPIRE LINDEN
	ULMUS AMERICANA `VALLEY FORGE` / AMERICAN ELM

SHRUBS	BOTANICAL / COMMON NAME
	CORNUS STOLONIFERA 'FARROW' / ARCTIC FIRE® RED TWIG DOGWOOD
	HYDRANGEA MACROPHYLLA 'PIIHM-II' / ENDLESS SUMMER® BLOOMSTRUCK® HYDRANGEA
	JUNIPERUS HORIZONTALIS 'BAR HARBOR' / BAR HARBOR CREEPING JUNIPER
	LAVANDULA X INTERMEDIA 'HIDCOTE GIANT' / HIDCOTE GIANT LAVENDIN
	LEUCANTHEMUM X SUPERBUM 'BECKY' / BECKY SHASTA DAISY
	SYRINGA VULGARIS 'CHARLES JOLY' / CHARLES JOLY COMMON LILAC

project no. 23-005

Landscape Architect

Kyle Brusveen

date 2023-03-27

By: Neumann Developments Inc.
N27W24025 Paul Court, Suite 100
Pewaukee, WI 53072

Welshire Farm

Single Family Residential Development
Town of Delafield, Wisconsin 53018

revisions:

814 Sylvia
Grand Rapids, MI 49504
telephone: 210.420.2630
web: ekbdesignworks.com

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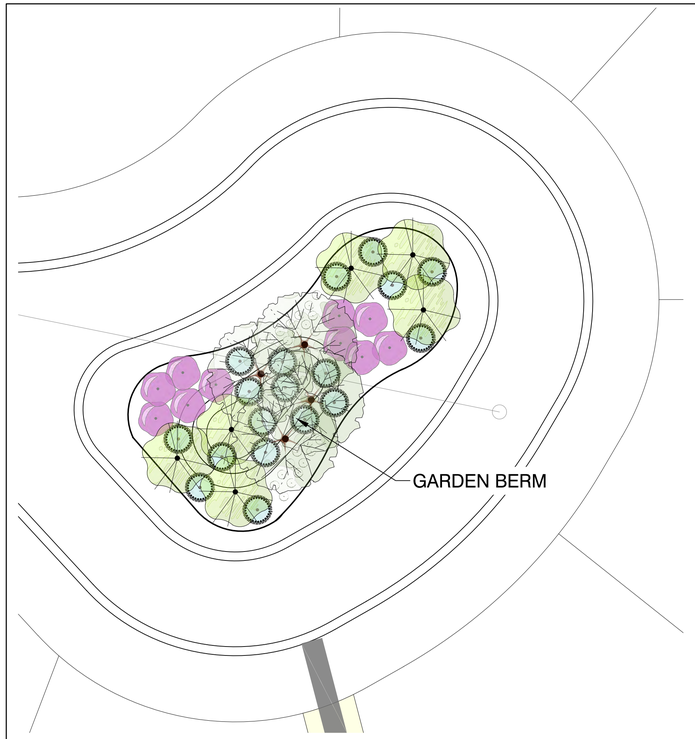
L-5

ENLARGED LANDSCAPE PLAN & DETAILS



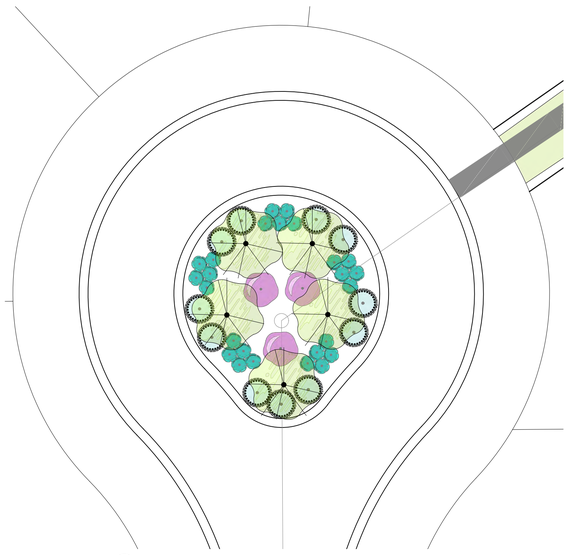
1 ENLARGED LANDSCAPE PLAN

1" = 20'-0"

NORTH

0 20 40 60 80 feet

1" = 20'



2 ENLARGED LANDSCAPE PLAN

NORTH

0 20 40 60 80 feet

20'-0"

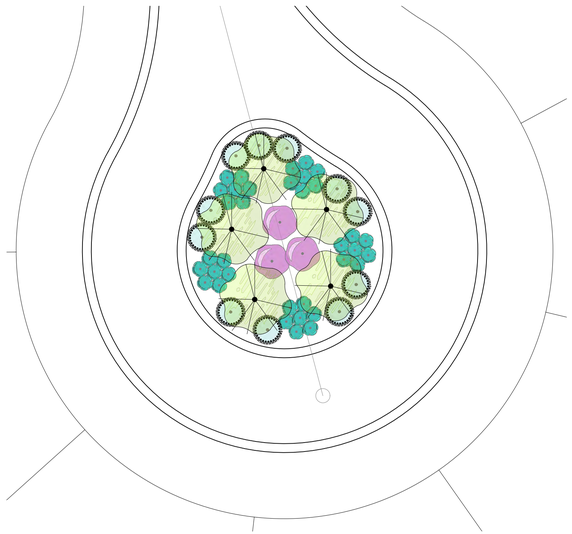
1" = 20'

PRELIMINARY

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME
	ACER SACCHARUM / SUGAR MAPLE
	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / AUTUMN BRILLIANCE SERVICEBERRY
	BETULA PAPYRIFERA `RENCI` TM / RENAISSANCE REFLECTION PAPER BIRCH
	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST
	JUGLANS NIGRA / BLACK WALNUT
	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR
	MALUS X `ADAMS` / ADAMS CRABAPPLE
	PICEA ABIES / NORWAY SPRUCE
	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE
	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE
	PINUS STROBUS / WHITE PINE
	QUERCUS ALBA / WHITE OAK
	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK
	SORBUS DECORA / SHOWY MOUNTAIN ASH
	TILIA AMERICANA `MCKSENTRY` / AMERICAN SENTRY LINDEN
	TILIA CORDATA `GREENSPIRE` / GREENSPIRE LINDEN
	ULMUS AMERICANA `VALLEY FORGE` / AMERICAN ELM

SHRUBS	BOTANICAL / COMMON NAME
	CORNUS STOLONIFERA 'FARROW' / ARCTIC FIRE® RED TWIG DOGWOOD
	HYDRANGEA MACROPHYLLA 'PIIHM-II' / ENDLESS SUMMER® BLOOMSTRUCK® HYDRANGEA
	JUNIPERUS HORIZONTALIS 'BAR HARBOR' / BAR HARBOR CREEPING JUNIPER
	LAVANDULA X INTERMEDIA 'HIDCOTE GIANT' / HIDCOTE GIANT LAVENDIN
	LEUCANTHEMUM X SUPERBUM 'BECKY' / BECKY SHASTA DAISY
	SYRINGA VULGARIS 'CHARLES JOLY' / CHARLES JOLY COMMON LILAC



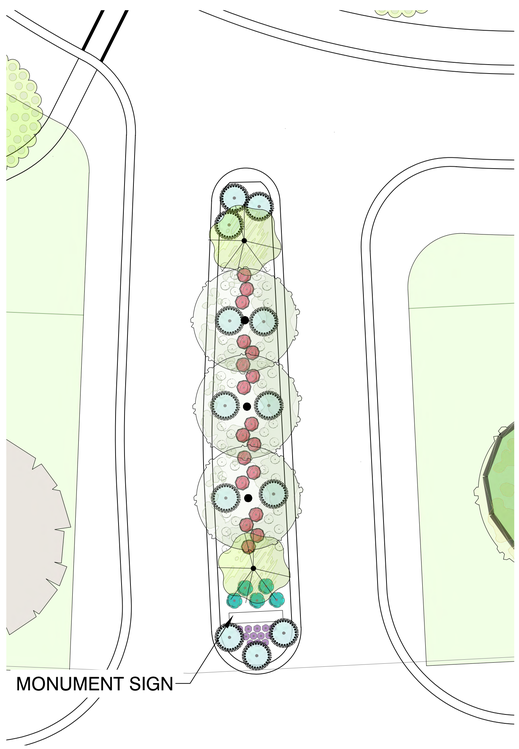
3 ENLARGED LANDSCAPE PLAN

1" = 50'-0"

NORTH

0 50 100 150 200 feet

1" = 50'



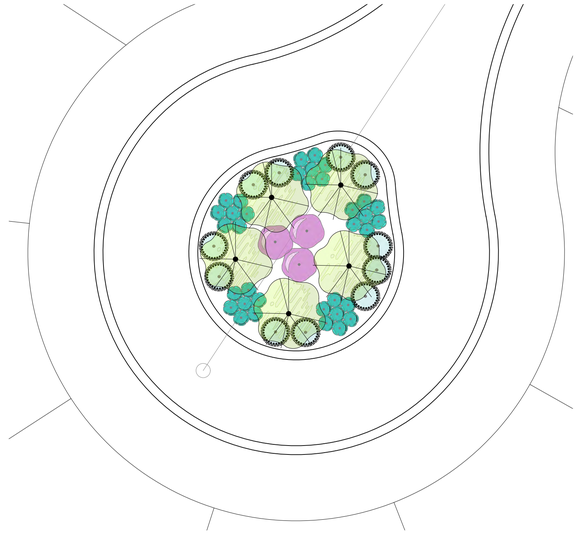
4 ENLARGED LANDSCAPE PLAN

1" = 50'-0"

NORTH

0 50 100 150 200 feet

1" = 50'



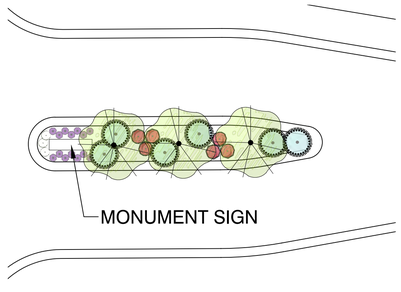
5 ENLARGED LANDSCAPE PLAN

1" = 50'-0"

NORTH

0 50 100 150 200 feet

1" = 50'



6 ENLARGED LANDSCAPE PLAN

1" = 50'-0"

NORTH

0 50 100 150 200 feet

1" = 50'

project no. 23-005

Landscape Architect

Kyle Brusveen

date 2023-03-27

Welshire Farm

Single Family Residential Development
Town of Delafield, Wisconsin 53018

By: Neumann Developments Inc.
N27W24025 Paul Court, Suite 100
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revisions:

814 Sylvia
Grand Rapids, MI 49504
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development documents

L-6

ENLARGED LANDSCAPE PLAN & DETAILS

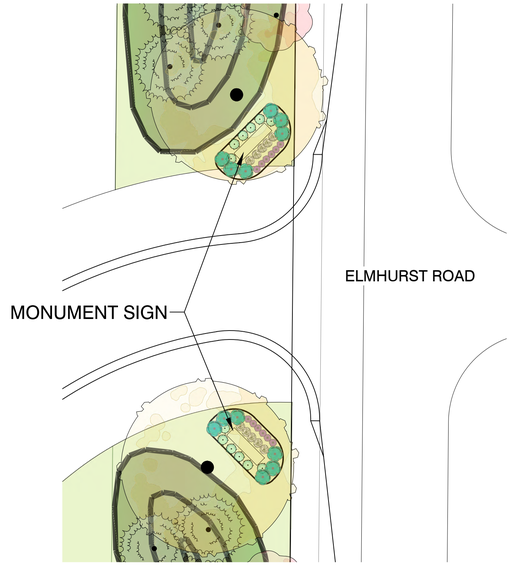
PLANT SCHEDULE

TREES	QTY	BOTANICAL / COMMON NAME	SIZE	CONTAINER	REMARKS
	32	ACER SACCHARUM / SUGAR MAPLE	2" CAL.	B&B	FALL COLOR, 70` HEIGHT
	38	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / AUTUMN BRILLIANCE SERVICEBERRY	25 GAL.	POT	WHITE FLOWERS, JUNE BERRIES, RED FALL FOLIAGE
	10	BETULA PAPYRIFERA `RENCI` TM / RENAISSANCE REFLECTION PAPER BIRCH	2" CAL.	B&B	
	21	GLEDITSIA TRIACANTHOS `SKYLINE` / SKYLINE HONEY LOCUST	2" CAL.	B&B	YELLOW FALL FOLIAGE, STREET TREE, 60` HEIGHT
	10	JUGLANS NIGRA / BLACK WALNUT	2" CAL.	B&B	
	12	JUNIPERUS VIRGINIANA 'TAYLOR' / TAYLOR EASTERN REDCEDAR	3` HT.	POT	
	9	MALUS X `ADAMS` / ADAMS CRABAPPLE	2" CAL.	B&B	
	79	PICEA ABIES / NORWAY SPRUCE	5` HT.	B&B	
	48	PICEA GLAUCA 'DENSATA' / BLACK HILLS WHITE SPRUCE	5` HT.	B&B	
	55	PICEA PUNGENS GLAUCA / COLORADO BLUE SPRUCE	5` HT.	B&B	
	79	PINUS STROBUS / WHITE PINE	5` HT.	B&B	
	9	QUERCUS ALBA / WHITE OAK	2.5" CAL.	B&B	
	12	QUERCUS MACROCARPA 'JFS-KW3' / URBAN PINNACLE® OAK	2.5" CAL.	B&B	
	17	SORBUS DECORA / SHOWY MOUNTAIN ASH	2" CAL.	B&B	
	10	TILIA AMERICANA `MCKSENTRY` / AMERICAN SENTRY LINDEN	2" CAL.	POT	PYRAMIDAL FORM, 50` HEIGHT, STREET TREE
	19	TILIA CORDATA `GREENSPIRE` / GREENSPIRE LINDEN	2" CAL.	B&B	PYRAMIDAL FORM, DARK GREEN, 40` HEIGHT
	18	ULMUS AMERICANA `VALLEY FORGE` / AMERICAN ELM	2" CAL.	B&B	80` HEIGHT, VASE SHAPE, YELLOW FALL FOLIAGE

SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE	CONTAINER	REMARKS
	27	CORNUS STOLONIFERA 'FARROW' / ARCTIC FIRE® RED TWIG DOGWOOD	3 GAL.	POT	
	177	HYDRANGEA MACROPHYLLA 'PIIHM-II' / ENDLESS SUMMER® BLOOMSTRUCK® HYDRANGEA	3 GAL.	POT	
	84	JUNIPERUS HORIZONTALIS 'BAR HARBOR' / BAR HARBOR CREEPING JUNIPER	3 GAL.	POT	
	44	LAVANDULA X INTERMEDIA 'HIDCOTE GIANT' / HIDCOTE GIANT LAVENDIN	1 GAL.	POT	
	89	LEUCANTHEMUM X SUPERBUM 'BECKY' / BECKY SHASTA DAISY	1 GAL.	POT	
	30	SYRINGA VULGARIS 'CHARLES JOLY' / CHARLES JOLY COMMON LILAC	3 GAL.	POT	

PLANT TOTALS

1. 478 TREES IN PROJECT.
2. 451 SHRUBS IN PROJECT.
3. 929 TOTAL PLANTS IN PROJECT.



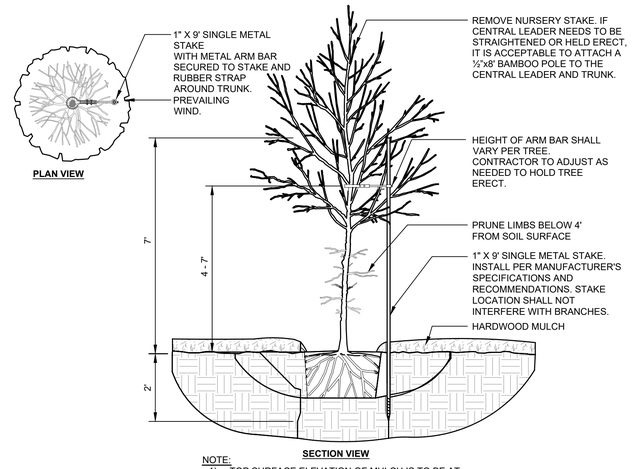
1 ENLARGED LANDSCAPE PLAN

1" = 20'-0"

0 20 40 60 80 feet

1" = 20'

PRELIMINARY



NOTE:
1) TOP SURFACE ELEVATION OF MULCH IS TO BE AT THE FINISH GRADE ELEVATION AND SHOULD NOT BLOCK DRAINAGE.
2) CONTRACTOR SHALL PROVIDE ADDITIONAL METAL STAKES AS REQUIRED TO KEEP TREE UPRIGHT AT NO ADDITIONAL EXPENSE TO CLIENT.

2 TREE PLANTING DETAIL

NOT TO SCALE

NOTE: TOP SURFACE ELEVATION OF MULCH IS TO BE AT THE FINISH GRADE ELEVATION AND SHOULD NOT BLOCK SITE DRAINIAGE.

3 SHRUB PLANTING DETAIL

NOT TO SCALE

4 EDGER DETAIL

NOT TO SCALE

project no. 23-005

Landscape Architect

Kyle Brusveen

date 2023-03-27

By: Neumann Developments Inc.
N27W24025 Paul Court, Suite 100
Pewaukee, WI 53072

Welshire Farm

Single Family Residential Development
Town of Delafield, Wisconsin 53018

revisions:

814 Sylvia
Grand Rapids, MI 49504
telephone: 210.420.2630
web: ekbdesignworks.com

development documents

L-7

DETAILS

MASTER DECLARATION OF COVENANTS, CONDITIONS, AND RESTRICTIONS OF WELSHIRE FARM COMMUNITY

Name and Return Address:

Welshire Farm, LLC
c/o Neumann Developments
N27 W24025 Paul Court, Suite 100
Pewaukee, WI 53072

Tax Key No(s): See Exhibit A

This Master Declaration of Covenants, Conditions and Restrictions of The Welshire Farm Master Association ("Declaration") is made and entered into this ___ day of _____, 20___, by Welshire Farm, LLC., a Wisconsin limited liability company ("***Declarant***").

RECITALS

A. Declarant owns certain real property, described on the attached Exhibit A and generally depicted on the site plan attached as Exhibit B ("Property"), upon which Declarant intends to construct or allow to be constructed or developed a single family community eventually consisting of approximately one hundred and fifty five (155) single family residential lots, fifty six (56) side-by-side duplex condominium units, and other related improvements, which shall include certain private drives, storm drainage facilities and other private utilities (collectively referred to as the "Development").

B. By this Declaration. Declarant intends to subject such property, the buildings, and other improvements including but limited to a swimming pool, parking areas, landscaping, walking paths, storm water facilities, signage and related amenities, whether presently or hereafter platted or constructed, to certain easements, rights, buildings, other improvements and all components thereof to certain restrictions.

C. In the event of a discrepancy between this document and the declarations that govern the two communities included herein, this Master Declaration shall control.

DECLARATION

NOW, THEREFORE. Declarant, as fee owner of such property, by this Declaration (1) establishes and imposes certain provisions, restrictions, conditions, easements and uses upon such real property; and (2) specifies that the provisions of this Declaration shall constitute covenants

running with the land which shall be binding upon Declarant, its successors and assigns, and all subsequent owners and occupants of all or any part of such real property.

ARTICLE 1 – DEFINITIONS

1.1 Board. "Board" or "Board of Directors" shall be the governing body of the Master Association, elected according to the bylaws.

1.2 Building. "Building" shall be any freestanding structure on the property.

1.3 Bylaws. "Bylaws" shall mean the Bylaws of the Master Association as adopted by the Board.

1.4 Common Areas. "Common Areas" shall consist of: (i) Outlots _____, as platted on the Welshire Farm plat. These outlots may include, but are not limited to, a swimming pool, parking lot, playgrounds, sports courts, walking trails and other recreational amenities, landscaping, and entrance signage for the Development intended for the common use and enjoyment and subject to the common support through assessments levied under this Declaration of each Owner of a Lot or Unit. It is further contemplated that other "Common Areas" may be added in future phases of the development.

1.5 Condominium. "Condominium" shall mean the portion of the Property subjected to a condominium declaration under the Wisconsin Condominium Ownership Act. Declarant intends to create a Condominium to be known as The Reserve at Welshire Farm Condominium ("Reserve"), The Condominium shall be governed by a "Condominium Association" being an association of unit owners organized pursuant to the Wisconsin Condominium Ownership Act.

1.6 Condominium Association. "Condominium Association" shall mean the nonprofit association incorporated to govern a Condominium in the Welshire Farm Community. The Condominium Association administering the Condominium is legally titled and shall be known in this Declaration as follows: "The Reserve Association", being The Reserve at Welshire Farm Condominium Association, Inc.

1.7 CSM. "CSM" is a certified survey map as recorded in the Register's Office (as defined below) and comprising a portion of the Property

1.8 Declarant. "Declarant" shall mean Welshire Farm, LLC and the successors and assigns of Declarant pursuant to assignment in accordance with the Declaration.

1.9 Declaration. "Declaration" shall mean this Declaration as the same may be amended from time to time.

1.10 Director. "Director" shall mean a member of the Board.

1.11 Homeowners Association. "Homeowners Association" shall mean The Welshire Farm Single Family Homeowners Association, Inc.

1.12 Lot. "Lot" is a home site upon which a single-family stand-alone home is or can be built.

1.13 Master Association. "Master Association" shall mean The Welshire Farm Master Association, Inc.

1.14 Master Association Insurance. "Master Association Insurance" shall mean all policies of insurance as may be maintained by the Master Association under this Declaration.

1.15 Members. "Members" shall mean the two entities that comprise the Master Association to include the Welshire Farm Single Family Homeowners Association, Inc. and the Reserve at Welshire Farm Condominium Association, Inc.

1.16 Mortgage. "Mortgage" shall mean a recorded first lien mortgage against a Lot or Unit or the vendor's interest under a recorded first lien land contract relating to a Lot or Unit.

1.17 Mortgagee. "Mortgagee" shall mean the holder of a Mortgage.

1.18 Municipality. "Municipality" shall mean the Town of Delafield, Waukesha County, Wisconsin.

1.19 Occupant. "Occupant" shall mean the Owner and any other person residing in a Unit or in a home constructed on a Lot.

1.20 Owner. "Owner" shall mean each fee simple owner of a Lot or Unit in the development, but if the Lot or Unit is the subject of a recorded land contract, then the Owner is the vendee under such land contract. Declarant is an Owner with respect to property to which it holds title.

1.21 Property. "Property" shall mean the real estate subject to this Declaration, as described and depicted on Exhibits A and B.

1.22 Register's Office. "Register's Office" shall mean the office of the Register of Deeds for Waukesha County, Wisconsin.

1.23 Rules. The "Rules" shall mean such rules, if any, as established by the Master Association governing the administration of the Common Areas.

1.24 Single Family. "Single Family" shall mean the Welshire Farm Single Family Development.

1.25 Storm Drainage Facilities. "Storm Drainage Facilities" shall mean storm detention ponds, catch basins, storm pipe, swales, and other storm facilities.

1.26 Unit. "Unit" is a unit in a Condominium.

ARTICLE 2. MASTER ASSOCIATION OF OWNERS

2.1 Administration. Prior to occupancy within the Development, Declarant shall establish the Master Association, which shall be incorporated and shall adopt Bylaws for its governance and administration of the Common Areas. The Board may, but need not, from time to time adopt and amend Rules which, upon adoption, shall be binding on Owners and Occupants. The Board shall administer and enforce the Common Areas, this Declaration, the Bylaws, the Rules, and all other uses of and restrictions on the Property. Pending establishment of the Master Association, all powers of the Master Association shall be exercised by Declarant.

2.2 Membership and Voting. The Reserve Association shall designate one (1) member to be a "Member Representative" of the Master Association. The Homeowner's Association shall designate two (2) members to be a "Member Representative". The Member Representatives shall represent their respective Association at Master Association meetings of the Members. In the Master Association, each of the three Members shall be entitled to one vote.

2.3 Control of the Master Association. Notwithstanding anything in Section 2.2 or elsewhere in the Declaration or in the Bylaws, Declarant shall have the right to appoint and remove Member Representatives and Directors of the Master Association and to exercise any and all powers and responsibilities assigned to the Master Association, the Board, or its, officers, by the Articles, By Laws, this Declaration or the Wisconsin Nonstock Corporation Law (Wisconsin Statutes Chapter 181 as amended from time to time), until the earliest of: (1) fifteen (15) years from the date that the first Lot or Unit is conveyed to any person other than the Declarant; or (2) thirty (30) days after the conveyance by Declarant to purchasers of all of the Lots or Units; or (3) Declarant's election to waive its rights to control.

2.4 Management. The Master Association may employ a professional management agent or company to assist in carrying out its duties regarding the Common Areas and this Declaration, with such experience and qualifications and on such terms and conditions as are acceptable to the Board. Any such agreement must be terminable by the Board, without cause upon ninety (90) days' notice without payment of any penalty.

ARTICLE 3. ASSESSMENTS

3.1 Budget and Assessments. The Master Association shall annually adopt a budget of common expenses and levy assessments on each Member. Each Member shall be responsible for a proportionate share of such expenses, which share is the percentage equivalent of a fraction where the numerator is the number of Lots or Units in the particular Member Association and the denominator is fifty five (55) being the total number of Lots and Units in the first phase of the Development. As future phases are added to the Development, the proportionate share shall be adjusted based on the number of lots or units added. The Master Association may also levy (x) special assessments on each Member for any purpose for which a general assessment may be levied and (y) fines on any Member for the purpose of collecting any amounts due the Master Association

or enforcing compliance of such Member with any provision of this Declaration, the Bylaws or any Rules.

3.2 Installments; Late Payments. General assessments shall be levied on an annual basis but shall be due and payable as determined by the Board from time to time. Special assessments shall be due and payable at such time and in such manner as the Board may determine. Any assessment or installment of an assessment not paid within ten (10) days of its due date may be subject to a late charge and/or interest as set forth in the Bylaws or in a Rule.

3.3 Enforcement' Liens. If a Member defaults in any payment the Master Association shall take appropriate measures as permitted by law. The defaulting Member shall be responsible for all costs incurred by the Master Association in seeking to enforce payment including the Master Association's reasonable attorneys' fees. Members shall be both personally liable for assessments or fines and a lien shall be imposed against all Lots or Units in the defaulting Member's Community for unpaid assessments. The lien shall be effective as of the recording date of a notice thereof in the Register's Office in the same manner as a condominium lien would be imposed. The lien shall be enforced generally in the way condominium liens are enforced. Liens for unpaid assessments shall also extend to and secure interest, fines and reasonable costs of collection including attorneys' fees incurred by the Master Association incident to the collection of assessments or enforcement of liens.

3.4 Payment of Assessments by Declarant. During the period of Declarant control, Declarant may, but shall not be obligated to, directly pay bills, or provide services, which would otherwise represent Master Association obligations to which regular assessments would be applied. Declarant shall be entitled to offset expenses incurred by Declarant in performing or paying for such Master Association obligations against assessments due on Declarant owned property, then Declarant shall be entitled to reimbursement from the Master Association.

3.5 Common Expenses and Surpluses. Common expenses and surpluses shall be allocated in the same manner as general assessments are allocated. All common surpluses for each fiscal year shall be retained for common expenses for the next succeeding fiscal year.

ARTICLE 4. MAINTENANCE AND ALTERATIONS

4.1 Owner Responsibility. Each owner shall reimburse the Master Association for the cost of the Master Association's repair or replacement of any portion of the Common Areas damaged through the fault or negligence of such Owner or such Owner's family, guests, invitees, or tenants.

4.2 Master Association Responsibility. The Master Association shall maintain in good condition and repair, replace and operate all of the Common Areas.

4.3 Municipal Responsibility. The Municipality shall have no responsibility for maintenance or alteration under this Article 4. In the event the Master Association does not properly landscape or maintain any Common Area, or properly maintain any signage, the Municipality may send written notice to the Master Association indicating that the Municipality has determined that the Common Areas and/or signage are not being properly landscaped and/or maintained, and further indicating that the Municipality will perform such landscaping and/or maintenance if not properly done by the Master Association. The above-referenced notice shall

give the Master Association a minimum of seven (7) days to correct the problem. If the Common Area and/or sign is not properly landscaped and/or maintained within the time granted by the above-referenced notice, the Municipality shall have the authority to landscape and/or maintain any such Common Area and/or sign referred to in said notice and shall have the right to charge the Owners on a pro rata basis for any costs incurred by the Municipality as a result of said landscaping and/or maintenance. Said costs shall be assessed as special charges pursuant to Section 66.0627, Wis. Stats. If such charges are not paid by any Owner within the period fixed by the Municipality, charges shall become a lien upon the Owner's Lot or Unit as provided in Section 66.0627, Wis. Stats., and shall be extended upon the tax rolls as a delinquent tax against the Owner's Lot or Unit as provided in Section 66.0627, Wis. Stats.

ARTICLE 5. INSURANCE

5.1 Master Association Insurance. The Master Association shall obtain and maintain comprehensive general public liability insurance for occurrences on the Common Areas (including areas which are included in such definition by virtue of easements granted herein) and such other policies and/or coverage as the Board deems necessary or advisable. Commercial general liability coverage shall be in such amounts as the Board determines annually, but not less than $500,000 per occurrence upon the filing of this Declaration. The limit shall be increased annually based on the Consumer Price Index.

5.2 Cost. Premiums for insurance obtained by the Master Association shall be a common expense, except that any increase in the rating or premium charged for any such insurance caused by the character or use of a Lot or Unit shall be allocated solely to its Owner.

5.3 Waiver. The Master Association and, by acceptance of a conveyance to a Lot or Unit, or any portion thereof or interest therein, each Owner or Occupant acting both for themselves and for their respective insurers, waive any claim it or they may have against the other for any loss insured under any policy obtained by either to the extent of insurance proceeds actually received, however the loss is caused, including such losses as may be due to the negligence of the other party, its agents, or employees. All policies of insurance shall contain a provision that they are not invalidated by the foregoing waiver, but such waiver shall cease to be effective if the existence thereof precluded the Master Association from obtaining any policy of insurance at a reasonable and customary rate.

ARTICLE 6. AMENDMENT OF DECLARATION

6.1 General. Except as otherwise provided herein, this Declaration may be amended only by the written consent of at least seventy-five percent (75%) or more of the total votes of the Master Association then entitled to vote, provided however, that any amendments to the Declarations where the Municipality is involved may require the approval by the Municipality. No amendment shall adversely affect a special right or easement reserved to Declarant, without the express written consent of Declarant.

6.2 Procedures. Amendments shall be prepared and executed by the president of the Master Association and shall become effective when recorded in the Register's Office. No action

to challenge the validity of an amendment shall be commenced more than one year after the amendment is recorded.

6.3 Termination. This Declaration shall be perpetual and run with the lands described on Exhibit A.

ARTICLE 7. REMEDIES FOR VIOLATION BY OWNER

7.1 General Remedies. If any Owner or Occupant fails to comply with this Declaration, the Bylaws, or the Rules, such Owner or Occupant shall be liable for damages, subject to injunctive relief, subject to any other remedy provided by the Bylaws, or all the above, as a result of such noncompliance. The Master Association or, in a proper case, an aggrieved Owner, may bring an action because of such noncompliance.

7.2 Owner or Occupant Violation; Master Association Right to Cure. In addition to any other remedies provided herein, if any Owner or Occupant fails to comply with this Declaration, the Bylaws or the Rules, which failure continues for a period of fifteen (15) days following written notice from the Master Association, the Master Association shall have the right, but not the obligation, to perform or cause to be performed such maintenance, replacement, restoration, or other action as the Master Association deems necessary or appropriate. Expenses incurred therefor by the Master Association shall be assessed against the Owner or Occupant and shall be subject to all rights and remedies reserved under this Declaration with respect to collection, expense, late payment penalties or interest, filing of a lien and /or foreclosure as reserved at Article 3 of this Declaration. Once the Master Association has taken such an action, it shall not be obligated to take any other or further action with respect to the same, similar, or subsequent failure by the same or a different Owner or Occupant.

ARTICLE 8. EASEMENTS

8.1 Right of Entry. A right of entry to each Condominium, Lot and Common Area or Outlot within, or adjacent to, any Condominium is reserved to the Master Association to service utility installations located on, in or under such property provided request for entry is made in advance and such entry is limited in scope to extend only as is reasonably necessary to service such utility installations. In case of emergency, entry by the Master Association onto any such property may be made immediately, whether the Owner or Occupant of such property is or is not present and without liability of the Master Association or its agents if such entry is necessary for the safety or welfare of persons or property. Any damage or loss causes because of such emergency entry shall be the sole expense of the Owner or Occupant if, in the reasonable judgement of those authorizing the entry, such entry was for emergency purposes.

8.2 Common Area Easements. The Master Association may grant easements over and through the Common Areas for such purposes the Master Association deems reasonable for the benefit of the Owners, provided the granted easement does not affect rights granted to the Municipality.

8.3 Drainage. An easement is reserved to Declarant and the Master Association over portions of the Property not intended for Unit construction for the installation of drainage tile,

swales, streams or other storm sewer and drainage system elements and vehicular and pedestrian success over such easement areas for maintenance or replacement.

8.4 Municipal Rights Regarding Easements. In the event the Master Association or Declarant does not exercise their right of entry in order to undertake repairs where necessary for the public health, safety and welfare, the Municipality has the right, but not the obligation, to substitute itself for the Master Association or Declarant.

ARTICLE 9. DECLARANT'S RESERVED RIGHT; TERMINATION

9.1 Declarant's Reserved Right. Notwithstanding anything in this Declaration to the contrary, Declarant reserves the right to develop individual portions of the Property for the purposes other than the four Developments contemplated herein. Such right shall be exercisable by Declarant at any time during which Declarant owns all portions of the Property as to be subject to such alternative development, provided approval is granted by the Municipality. Upon Declarant's exercise of such right, Declarant, acting alone, shall have the right and authority to amend this Declaration respecting the easements herein reserved and the allocation of assessments for Common Areas maintenance as contained in Article 3 in an equitable manner.

ARTICLE 10. CONSTRUCTION AND EFFECT

10.1 Including. Whenever used herein, the term "including" preceding a list of one or more items shall indicate that the list contains examples of a general principle and is not intended as an exhaustive listing.

10.2 Captions. The captions and article and section headings in this Declarations are intended for convenience and reference only and in no way define or limit the scope or intent of the various provisions hereof.

10.3 Severability. If any portion of this Declaration or its application to any person or circumstance is held to be invalid or unenforceable, the remainder of this Declaration, or the application of such provision, or any part thereof, to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby. The remainder of this Declaration shall be valid, and enforced, to the fullest extent permitted by law.

10.4 Remedies. All remedies herein are cumulative.

10.5 Waivers. Whenever a waiver, consent or approval is required or permitted herein, it must be expressed in writing; no waiver, consent or approval shall be implied. A waiver, consent or approval to any one matter shall not be deemed a waiver, consent or approval to any subsequent matter whether similar or not.

10.6 Assignment of Declarant's Rights. Declarant may from time to time assign any or all of the rights and benefits conferred on or reserved herein for Declarant in its status as such (as opposed to those rights or benefits conferred on or reserved for all Owners or groups thereof), by an instrument in writing specifically identifying the rights and benefits so assigned which is recorded at the Register's Office. Upon any assignment of all rights reserved hereunder to Declarant to a transferee, the transferor under such assignment shall be relieved of any and all further liability under this Declaration.

IN WITNESS WHEREOF, this Declaration has been duly executed as this _____ day of _____, 20___.

DECLARANT:

Welshire Farm, LLC,
a Wisconsin limited liability company

By: Neumann Developments, Inc., sole Member

By: _____
Bryan Lindgren, President

ACKNOWLEDGMENT

STATE OF WISCONSIN)
) ss.
COUNTY OF WAUKESHA)

Personally came before me this ____day of _____, 2024, the above named Bryan Lindgren, President of Neumann Developments, Inc. sole member of Welshire Farm, LLC, by its authority, and to me known to be the person who executed the foregoing instrument and acknowledged the same.

[SEAL]

_____
Name:_____
Notary Public, State of Wisconsin
My commission:_____

This instrument was drafted by:

Neumann Developments
Ryan Fritsch
N27 W24025 Paul Court, Suite 100
Pewaukee, WI 53072

EXHIBIT A

Legal Description

EXHIBIT B

Final Plat

“The Reserve at Welshire Farm” Logo

CONDOMINIUM DECLARATION FOR
THE RESERVE AT WELSHIRE FARM CONDOMINIUM
Index of Declaration

CONDOMINIUM DECLARATION
FOR
THE RESERVE AT WELSHIRE FARM CONDOMINIUM

THIS DECLARATION is made pursuant to The Condominium Ownership Act of the State of Wisconsin, Chapter 703 of the Wisconsin Statutes (hereinafter sometimes referred to as the "Act"), by Welshire Farm LLC, a Wisconsin limited liability company, (hereinafter "Declarant").

1. STATEMENT OF DECLARATION.

Declarant, as the sole owner of the Land described in Section 3 hereof, together with all buildings and improvements constructed or to be constructed thereon all easements, rights, and appurtenances thereto (hereinafter referred to as "The Property") hereby submits and subjects said Property to the condominium form of ownership pursuant to the Act and this Declaration, which property shall be held, conveyed, devised, leased, encumbered, used, improved, and in all respects otherwise affected subject to the provisions, conditions, covenants, restrictions and easements of this Declaration and of the Act. Furthermore, this declaration shall subject the Condominium to participation in the Welshire Farm Master Association, Inc.; and all provisions hereof shall be deemed to run with the land and shall constitute benefits and burdens to the Declarant, its successors and assigns, and all parties hereafter having any interest in the Property.

2. NAME.

The name of the condominium created by this Declaration ("Condominium") shall be **THE RESERVE AT WELSHIRE FARM CONDOMINIUM**.

3. LEGAL DESCRIPTION.

The real property comprising the Property (the "Land") which is hereby submitted and subjected to the provisions of the Act is legally described as set forth on **EXHIBIT A** attached hereto and incorporated herein.

4. DEFINITIONS.

For the purpose of brevity and clarity, certain words and terms used in this Declaration are defined as follows:

(a) "**ASSESSMENTS**" refers to both General Assessments and Special Assessments and means the amount determined by the Association to be due with respect to a Unit for Common Expenses and other charges.

(b) **"ASSOCIATION"** shall mean and refer to **THE RESERVE AT WELSHIRE FARM CONDOMINIUM ASSOCIATION, INC.** a

corporation formed under the Non-Stock Corporation Statute, Chapter 181, Wis. Stats, its successors and assigns.

(c) "**BUILDING**" shall mean any freestanding structure constructed or to be constructed upon the Property containing Units.

(d) "**BY-LAWS**" means the by-laws of the Association.

(e) **"COMMON ELEMENTS"** shall mean all portions of the Condominium other than Units.

(f) **"DECLARANT"** shall mean and refer to Welshire Farm, LLC and its successors and assigns.

(g) "**EXPANSION REAL ESTATE**" means the real property together with all buildings and improvements constructed or to be constructed thereon and all easements, rights, and appurtenances thereto, described on **EXHIBIT B**, which may be added in whole or in part at any time within ten (10) years of the date of recording of this Declaration of Condominium in accordance with the provisions of this Declaration and the Act.

(h) **"LIMITED COMMON ELEMENTS"** shall mean those Common Elements identified in this Declaration or on the Condominium Plat as reserved for the exclusive use of one or more, but less than all, of the Unit Owners.

(i) **"MAJORITY"** shall mean the Condominium Unit Owners with more than fifty percent (50%) of the votes assigned to the Units in this Declaration.

(j) **"MORTGAGE"** shall mean any recorded mortgage, land contract or other security instrument by which a Unit or any part thereof is encumbered.

(k) **"MORTGAGEE"** shall mean the holder of any Mortgage or any land contract vendor.

(l) **"OWNER"** shall mean and refer to the Person who holds legal title to a Unit, or the holder of an equitable interest as a land contract vendee, but excluding any Mortgagee before such Mortgagee takes title to a Unit by foreclosure or process in lieu thereof.

(m) "**PERCENTAGE INTEREST**" means the undivided

percentage interest from time to time of each Unit, determined as provided in Section 9, below.

(n) **"PERSON"** shall mean an individual, corporation, partnership, association, trust, limited liability company or other legal entity.

(o) **"PLAT"** shall mean the condominium plat of the condominium a copy of which is attached hereto as **EXHIBIT C**, being recorded pursuant to the Act contemporaneously with this Declaration, as the same may be amended from time to time.

(p) "**RULES AND REGULATIONS**" means the Rules and Regulations of the Association, and as amended from time to time.

(q) **"UNIT"** shall mean that part of the Condominium designed and intended for the exclusive use by an Owner, as further defined herein.

(r) **"UNIT NUMBER"** shall mean the number identifying a Unit.

5. DESCRIPTIONS OF BUILDINGS AND UNITS

5.1 BUILDINGS. The approximate locations and dimensions of the twenty eight (28) Buildings initially constructed or to be constructed by Declarant are shown on the Condominium Plat. The buildings are, or will be, constructed principally of wood and use of masonry and concrete, with such exterior siding and trim materials as Declarant may determine in Declarant's sole discretion.

5.2 UNIT IDENTIFICATION. Initially, the Condominium shall initially consist of _____ Units located in _____ one-story buildings. Each Unit shall be specifically designated by a Unit number. The Unit numbers are set forth on the Condominium Plat. Every deed, lease, mortgage, or other instrument may legally describe a Unit by identifying its Unit number, and every such description shall be deemed good and sufficient for all purposes, as provided in the Act. The street addresses of the Units are set forth on the attached **EXHIBIT D**.

5.3 UNIT BOUNDARIES. The vertical boundaries of each Unit shall be the vertical plane of the walls bounding a Unit, the face of which coincides with the face of the wall studs, or, in the case of foundation walls, the face of the masonry foundation walls. The lower horizontal boundary of a Unit shall be the plane of the upper surfaces of the base floor of the lowest level of the Unit, and the upper horizontal boundary shall be

the plane of the under surface of the joists supporting the ceiling of the highest level of the Unit.

Each Unit shall also include all of the following: all windows, window frames, and doors (including garage doors), including all glass and all screens in all windows and doors,; any and all attic space and basement space accessible exclusively from one Unit; all installations, equipment, and fixtures for providing power, light, gas, hot and cold water, heating, refrigeration and air conditioning exclusively serving one Unit (even though such items may lie partially in and partially out of the designated boundaries of a Unit); finished surfaces, including, all plaster drywall, wallpaper, interior paint, carpet, carpet pad, vinyl flooring, finished wood flooring, crown and base moldings, cabinets, appliances, sinks, bathtubs, and other plumbing facilities and similar interior finishing and decorating; and, the attached garage for the Unit.

5.4 **DECLARANT'S RIGHT TO CHANGE PLANS.** Declarant reserves the right to change, without the approval of the Unit Owners or the Association, the layout, location, dimensions and construction details of the Buildings, Units and Common Elements, including, but not limited to any Limited Common Elements shown on the Condominium Plat, which are not yet constructed, provided that such changes shall not substantially alter the nature and quality of the Buildings, Units or Common Elements. Buildings in the Expansion Real Estate may contain up to 2 Units each.

6. EXPANSION OF CONDOMINIUM

6.1 Option to Expand. The Declarant, its successors, and assigns, for a period of ten (10) years from the date of the recording of this Declaration, hereby expressly reserves an option to expand the Property in compliance with Section 703.26 of the Act without the consent of any Unit Owner or Mortgagee. Declarant shall be under no obligation to and makes no representations that it will expand or construct any part or all of the Condominium and no Unit Owner or other person shall have the right to require the same. The option to expand is subject to the following:

(a) the total area of Expansion Real Estate added to the Condominium shall not exceed the total area of the Expansion Real Estate as depicted on the Condominium Plat and described in **Exhibit C**.

(b) the maximum number of Units in the Condominium as expanded will not exceed 56.

(c) each time Declarant desires to exercise its right to expand, Declarant shall execute and record an amendment to this Declaration, and an Addendum to the Condominium Plat which shall describe the portion of the Expansion Real Estate to be added to the Condominium, the number of Units to be added, a description of the additional Units and any additional Common Elements, the percentage Interest of each Unit, and any complimentary additions and modifications to the Declaration as may be necessary and desirable to reflect the different character, if applicable, of the Expansion Real Estate being submitted to the Declaration, including a

provision for additional easements, or to reflect any adjustment to the Common Expenses in connection with the condominium as expanded.

(d) the Declarant has the sole right to determine the location, size, quality and other similar features of the Expansion Real Estate, including without limitation the Common Elements, Limited Common Elements, building size, number of Units in a building (up to 2 Units per building) and the Units; provided, however, the improvements to the Expansion Real Estate shall be completed in a manner which is substantially similar in quality and workmanship to the improvements theretofore subject to this Declaration. The Expansion Real Estate added to the Condominium shall be subject to the same use restrictions contained herein.

(e) in the event the Declarant exercises its right to expand the Condominium pursuant hereto, then upon any such expansion all references in this Declaration to the "Buildings," the "Condominium," "Units," "Property," "Owners," "Association," "Common Expenses" and all other terms which refer to the Condominium automatically shall refer to the Condominium as expanded.

(f) in the event the Condominium is expanded, the Percentage Interest shall be adjusted as set forth herein and the Common Expenses, Assessment and other similar expenses assessed by this Declaration and any other Condominium document shall be adjusted according to the then existing needs of the Condominium.

(g) in the event the Condominium is expanded, Unit Owners of Units added to this Declaration shall be entitled to vote, with each Unit having one vote, upon the recording of the Amendment to this Declaration which adds the Units to the Condominium, subject, however, to the prohibited voting provisions set forth elsewhere in this Declaration

6.2. **Consent**. By acceptance of a deed of conveyance of a Unit, the grantee is hereby deemed to:

(a) agree to the expansion of the Condominium and shall make no attempts to prevent the expansion of the Condominium in the event the Declarant decides to exercise its option to expand the Condominium; and

(b) acknowledge that the Expansion Real Estate or parts thereof may be developed for uses other than as part of the Condominium.

7. COMMON ELEMENTS AND FACILITIES.

7.1 Description. The Common Elements shall consist of all of the Condominium, including improvements and appurtenances thereto, except the Units and fixtures therein, and shall include, without limitation, the private roadway including curbs, watermain and laterals, sanitary sewer mains and laterals, land; Building exteriors,

including garage exteriors; perimeter and bearing walls; any privacy screening that benefits multiple units equally; surface parking; Building roofs and trusses; foundations; common pipes, ducts, wiring conduits, pumps and other apparatus relating to common utility services; public utility lines (except those owned by the applicable utility); Building beams and supports; or any other amenities added by the Declarant or the Association; the private storm sewer and drainage system, if any, including, but not limited to all structures, mains, conduits, pipes, lines, equipment, appurtenances, and hereditaments which may in any way be a part of, or pertain to, such underground storm water facilities and stormwater detention ponds; common parking areas, private streets, common sidewalks and landscaping comprising the Condominium.

7.2 Owner's Right to Ingress and Egress and Easement of Enjoyment. Each Owner shall have the right to use the Common Elements, except for Limited Common Elements not appurtenant to their Unit, as may be required for any purpose, including, but not limited to ingress and egress to and from and the use, occupancy, and enjoyment of the Unit owned by such Owner. Such rights shall extend to the Unit Owner, his family members, agents, guests and invitees. The use of the Common Elements and the rights of Unit Owners with respect thereto shall be subject to and governed by the provisions of the Act and the Declaration, By-Laws and the Rules and Regulations.

7.3 Easements.

(a) Support Easement. Each Unit shall have an easement for structural support over every other Unit in the Building in which it is located and in the Common Elements, and each Unit and the Common Elements shall be subject to an easement for structural support in favor of every other Unit in the Building in which it is located and the Common Elements.

(b) Common Elements Easement. The Common Elements are hereby made subject to the following easements in favor of the Units benefited:

(i) for the installation, repair, maintenance, use, removal and/or replacement of air conditioning, heating and hot water systems and equipment, any chutes, flues, exhaust fans, ducts, conduits, wires, cables, electrical, security, telephone, television and other communication systems, water, sewer and gas mains and laterals, and all other utility lines and distribution systems, to the extent any such system or that portion of a system serves a particular Unit or is necessary for service to a Unit;

(ii) for the installation, repair, maintenance, use, removal and/or replacement of lighting fixtures, electrical receptacles, panel boards and other electrical installations which are a part of or serve any Unit but which encroach into a part of a Common Element adjacent to such Unit; provided that the installation, repair, maintenance, use, removal or replacement of any such item does not

unreasonably interfere with the common use of any part of the Common Elements, adversely affect either the thermal or acoustical character of the Building or impair or structurally weaken the Building; or

(iii) for the maintenance of the encroachment of any lighting devices, outlets, medicine cabinets, shelving, wall safes, exhaust fans, ventilation ducts, registers, grilles and similar fixtures which serve only one Unit but which encroach into any part of any Common Elements.

(c) Unit Owner's Grant of Easement. By acceptance of a deed of conveyance, each Unit Owner thereby grants a right of access to his Unit, including, without limitation, the right of access provided by Section 703.32 of the Act, to the Association or their respective agents and employees, for the purpose of exercising their respective powers and responsibilities, including without limitation making inspections, correcting any condition originating in a Unit and threatening another Unit or the Common Elements, performing installations, alterations or repairs to the mechanical or electrical services or the Common Elements in a Unit or elsewhere in the Condominium, or to correct any condition which violates the provisions of this Declaration and the By-Laws and Rules and Regulations; provided, that requests for entry are made in advance and that any such entry is at a time reasonably convenient to the Unit Owner. Notwithstanding the foregoing, in case of an emergency, such right of entry shall be immediate and without notice, whether or not the Unit Owner is present at the time. Any exercise of the rights herein conferred to the extent practicable shall be in a manner so as not to interfere unreasonably with the use of a Unit.

8. LIMITED COMMON ELEMENTS.

8.1 Description. Certain Common Elements shall be reserved for exclusive use of one or more Unit Owners, but less than all Units. The Limited Common Elements shall include those areas specifically designated as Limited Common Elements in this Declaration and/or on the Condominium Plat, and also including but not necessarily limited to: all landings, access steps, porch, patio, sidewalks, privacy fencing, driveways and walkways which service and/or are appurtenant to one and only one Unit, whether or not specifically designated as such on the Condominium Plat. In addition to the foregoing, the Association may, through the By-laws and/or the Rules and Regulations, establish (and delete, if so established) Limited Common Element planting areas for Units. The exclusive use of Limited Common Elements shall be reserved to the Owner or occupant for the Unit or Units to which they are appurtenant or serve, to the exclusion of all other Units and Unit Owners in the Condominium. The rights of use herein reserved shall extend to the Unit Owner whose Unit is benefited thereby, his family members, agents, guests, and invitees

8.2 Patios, Decks and Privacy Fencing. As set forth above, all areas used for porches, patios, decks, and privacy fencing are Limited Common Elements appurtenant to the Unit to which same are attached. Declarant, or it's assigns, has the

express right to construct patios, decks, and privacy fencing, and all such patios, decks, privacy fencing and/or porches constructed by the Declarant as part of the initial construction shall be deemed Limited Common Elements appurtenant to such Unit. Unit Owner may be provided with the opportunity to construct or expand the patio and/or deck at a later date, subject to approval by the Association as provided for elsewhere in this Declaration, By-laws or Rules and Regulations. The Unit Owner shall be solely responsible for all costs of replacing, maintaining, and repairing all patios, privacy fencing, decks, and Limited Common Element planting areas appurtenant to such Unit. The Unit Owner shall maintain same in a first-class condition at all times, and in accordance with any requirements set forth in the By-laws and/or Rules and Regulations.

8.3 Use. The manner of use of the Limited Common Elements shall be governed by the Act, this Declaration, the By-laws, and Rules and Regulations, and no Unit Owner shall alter, remove, repair, paint, decorate, landscape, or adorn any Limited Common Element, or permit such, in any manner contrary to the Act, this Declaration, the By-Laws and/or the Rules and Regulations. No major or structural changes or alternations, and no changes affecting the visual look of the exterior of a Unit or any common or Limited Common Element, shall be made by any Unit Owner to any Unit or to any of the Common or Limited Common Elements, without the prior written approval of the Association, which approval may be given or denied upon such terms and conditions as the Association deems appropriate.

9. PERCENTAGE OF OWNERSHIP IN COMMON ELEMENTS AND FACILITIES AND LIMITED COMMON ELEMENTS.

Each Unit Owner shall own an undivided interest in the Common Elements as a tenant in Common with all other Unit Owners and, except as otherwise limited by the Act, this Declaration, the By-laws, and the Rules and Regulations, shall have the right to use and occupy the Common Elements (other than Limited Common Elements not appurtenant to the Unit Owner's Unit) for all purposes incident to the use and occupancy of the Unit as a place of residence, and such other incidental uses permitted by this Declaration, which rights shall be appurtenant to and run with the Unit. The Percentage Interest in Common Elements shall be determined by dividing one (1) by the number of Units then included in the Condominium, except as modified by merger or separation of units per section 21 of this Declaration. Initially the percentage interest shall be ____ X_____ divided by .

10. ASSOCIATION OF UNIT OWNERS.

10.1 Membership, Duties and Obligations. All Unit Owners shall be entitled and required to be a member of the Association of Unit Owners known as The Reserve at Welshire Farm Condominium Association, Inc. which shall be responsible for carrying out the purposes of this Declaration, including the exclusive management and control of the Common Elements and facilities and Limited Common Elements. Such Association shall be incorporated as a non-stock, non-profit corporation under the laws of the State of Wisconsin. Each Unit Owner and the occupants of the Units shall abide by and be subject to all of the rules, regulations, duties and obligations of the Act, this

Declaration and the By-Laws and Rules and Regulations including the sharing of common expenses as described therein.

10.2 Voting Rights. Each Unit shall be entitled to one vote at meetings of the Association, except as modified by merger or separation of units per section 21 of this Declaration, subject, however, to the prohibited voting provisions set forth elsewhere in this Declaration (including section 15.13 hereof) and/or otherwise allowed by law. When more than one person holds an interest in any Unit the vote for such Unit shall be exercised as they, among themselves, determine, but in no event shall there be more than one vote cast with respect to any Unit. There can be no split vote. If only one of multiple Owners of a Unit is present at a meeting of the Association, the Owner present is entitled to cast the vote allocated to that Unit. If more than one of the multiple Owners is present, and any one of them purports to cast the vote allocated to that Unit on any issue without protest being made promptly by any other Owner(s) of such Unit to the person presiding over the meeting, it shall be conclusively presumed that such voting Owner had the authority to cast the vote. In the event of such a protest, if such dispute is not resolved by the multiple Owners prior to the vote being completed, said Unit shall not be entitled to cast a vote on that issue.

The respective rights, qualifications, prohibitions, and obligations of the members relative to voting may be further set forth in the Articles of Incorporation and/or the By-Laws of the Association.

10.3 Control. Notwithstanding anything contained in this Declaration to the contrary, the Declarant shall totally govern the affairs of the Condominium until the first Unit has been sold to any person other than the Declarant. The Declarant may exercise any rights granted to, or perform any obligations imposed upon, Declarant under this Declaration through its duly authorized agent. Except as provided in Section 10.4, after the first Unit has been sold by Declarant to any person other than Declarant, the Declarant shall have the right to appoint and remove the officers of the Association and to exercise any and all of the powers and responsibilities assigned to the Association and its officers by the Articles, Bylaws, the Condominium Ownership Act, this Declaration, and the Wisconsin Nonstock Corporation Law, until the earliest of: (a) ten (10) years from the date of recording of this Declaration, unless the statute governing expansion of condominiums is amended to permit a longer period, in which event, such longer period shall apply; or (b) thirty (30) days after the conveyance of seventy-five percent (75%) of the Common Element interest to purchasers. Nothing herein contained shall be construed to prevent Declarant from waiving it right to control at an earlier date. Each owner of a condominium Unit in the Condominium shall be deemed, by acceptance of any deed to any Unit, to agree, approve and consent to the right of Declarant to so control the Association.

10.4 Board of Directors. The affairs of the Association shall be governed by a board of directors ("Board of Directors"). The rules governing the Board of Directors shall be established and governed by the By-Laws of the Association.

10.5 Association Personnel. The Association may obtain and pay for the service of any person or entity to manage its affairs to the extent it deems advisable and may hire such other personnel as it shall determine to be necessary or advisable for the

proper operation of the Condominium. The Association may contract for common services or utilities as may be required for the Condominium or individual Units. All amounts payable by the Association to under such contracts shall be chargeable to the Owners as a Common Expense.

11. RESIDENTIAL PURPOSE.

The Buildings and the Units contained therein, and the Common Elements, are intended for and restricted exclusively to residential use as governed by the terms and conditions contained herein and by the By-Laws and/or Rules and Regulations. Notwithstanding the foregoing, until such time as the Declarant has sold all of its Units in the Condominium, the Declarant shall have the right to use any or all unsold Units, and any portion of the Common Elements (including but not limited to the Clubhouse) as may be necessary to expedite the sale of Units, including but not limited to the maintaining of a sales office, the maintaining of one or more model Units, the holding of open houses and the erecting of signs. The Association may not charge rent or bill the Declarant while the Declarant exercises its rights to use any portion of the Common Elements. The use of Units and Common Elements is further subject to the following:

(a) The Declarant may lease a Unit on such terms and conditions as it desires in its sole discretion. After a Unit has been conveyed by Declarant to an Owner, it may not thereafter be leased except for a term of no less than six months (6) months. If a Unit is leased by an Owner, the Owner of such Unit shall notify the Association of the tenant's or tenants' name or names, telephone number, and email address, and such Owner shall notify the Association prior thereto of the Unit Owner's forwarding address and of a telephone number and email address where the Unit Owner can be reached. Within five (5) business days after entering into or renewing a written condominium rental agreement, the Unit Owner shall provide a copy of the agreement to the Association along with proof of rental insurance. Any rental agreement shall contain a provision obligating the tenant to abide by this Declaration, the Articles, the By-laws, and/or the Rules and Regulations and shall provide that any default arising out of the tenant's failure to abide by the Declaration, the Articles, the By-laws, and the Rules and Regulations shall be enforceable by the Association as a third-party beneficiary to the lease and that the Association shall have, in addition to all rights and remedies provided under the Declaration, the Articles, the By-laws and/or the Rules and Regulations, the right to evict the tenant and/or terminate the lease should any such violation continue for a period of ten (10) days following delivery of written notice to the tenant specifying the violation. The Association shall keep a copy of any condominium rental agreement on file while the agreement is in effect. Before a tenant occupies a Unit, the Unit Owner shall provide a copy of the Declaration, By-laws and Rules and Regulations to the tenant or place the information in the Unit. In no event shall a Unit Owner be relieved from any obligation imposed by the Act, this Declaration, the By-Laws and/or Articles of Incorporation, and/or Rules and Regulations adopted pursuant thereto, including but not limited to the duty to pay Assessments and Common Expenses. The rental of Units

is further subject to such further conditions and restrictions as may be set forth in the By-Laws and/or Rules and Regulations of the Association, including but not limited to a limit on the percentage of Units that are not owner occupied.

(b) A Unit shall not be rented for transient or hotel purposes, which shall be defined as: (i) any rental for periods of less than six (6) months; or (ii) any rental if the occupants of the Unit are provided customary hotel services, such as room service for food and beverage, maid service, bellboy service or laundry service.

(c) No sign of any kind shall be displayed to the public view on any Unit without the written consent of the Association or, if Declarant owns at least one Unit, the Declarant. The Declarant reserves the right to erect signs, gates, or other entryway features surrounded with landscaping at the entrances to the Condominium and to erect appropriate signage for the sales of Units.

(d) Parking areas (including driveways on which parking is allowed), whether designated Common Elements or Limited Common Elements, shall be used only for the parking of private passenger automobiles, pickup trucks, motorcycles, and bicycles. Such vehicles shall at all times, be in running condition and bear current license plates. Persons using such parking areas shall, at reasonable times, for a reasonable period and upon reasonable notice, remove their vehicles therefrom to permit the parking areas to be repaired, resurfaced, repainted or to permit cleaning thereof or the removal of snow therefrom or for similar purposes. No more than two (2) vehicles shall be parked on a driveway, except multiple vehicles may be parked on a driveway on a temporary, short-term basis when several guests may be visiting a Unit at one time. In no case may a vehicle be parked outside of a garage and not moved for more than three (3) consecutive days.

(e) Pets are permitted, subject to conditions, restrictions and prohibitions as may be set forth in the By-laws and/or the Rules and Regulations.

(f) Exterior antennae may not be placed on any building. Satellite dishes may be placed on the Buildings or the Limited Common Element appurtenant to an Owner's Unit, but only with prior approval of the Association, which approval shall not be unreasonably withheld, conditioned, or delayed.

(g) A Unit Owner's may not plant any flowers, vegetables, trees, shrubbery, or other plants in any Common Element unless specific written approval is provided by the Association. Such approval may be granted or denied at the sole discretion of the Association. If planting approval is granted, the Association shall have the right to remove, dispose of, relocate,

trim and/or prune any such planting as it may thereafter determine, in its sole discretion, at unit owner expense. Approval, if granted, may include restrictions.

12. REPAIRS AND MAINTENANCE.

12.1 Individual Units. Each Unit Owner, at his sole expense, shall be responsible for keeping his Unit, including those items set forth in Section 5.3 and all of the equipment, fixtures and appurtenances, located on or upon the Unit and the following Limited Common Elements over which the Unit Owner has exclusive use: any patio, deck, porch, concrete stoop, concrete walkway connecting a porch to the driveway, Limited Common Element planting area, which is reserved for the exclusive use of the unit, in good order, condition and repair (and, if necessary, replacement) and in a clean and sanitary condition all as may be more fully set forth in the By-Laws and/or Rules and Regulations of the Association along with Board of Directors' approval. Without in any way limiting the foregoing, in addition to decorating and keeping the Unit in good repair, each Unit Owner shall be responsible for the maintenance, repair or replacement of any plumbing fixtures, doors and windows (including washing and replacement of broken glass), screens and screening, lighting fixtures, refrigerators, ranges, heating and air conditioning equipment, dishwashers, disposals, Limited Common Element planting areas, laundry equipment such as washers and dryers, interior electrical wiring and fixtures, all communication systems, water, sewer, and gas main and laterals and other utility lines, distribution systems and other fixtures and equipment and any portions thereof exclusively serving that Unit, while any portions thereof serving more than one Unit or any portion of the Common Elements shall be deemed a part of the Common Elements. In addition, each Unit is responsible for installing and maintaining photo electric lights that operate from dusk to dawn on the front elevation of the Unit to illuminate the front entrance. The Unit Owner shall be solely responsible for the cost of repair of any damage to the Condominium caused by the Unit Owner's failure to discharge his obligation pursuant to this Section 12.1. If a Unit Owner fails to discharge his obligations pursuant to this Section 12.1, then the Association shall have the right, but not the obligation, to discharge such obligations on behalf of the Unit Owner and any if the costs so incurred by the Association are not promptly repaid to the Association, then the Board of Directors shall assess a Special Assessment against the Unit for such expense.

12.2 Common Elements and Facilities. Except as otherwise set forth herein, the Association shall be responsible for the management and control of the Common Elements, including any Limited Common Elements serving more than one Unit, and shall cause the same to be kept in good, clean, attractive, and sanitary condition, order and repair. Without in any way limiting the foregoing, this shall include all repair and maintenance of the Buildings, including, the exterior walls and roofs, parking, upkeep and maintenance of private roadways, water, sanitary and storm sewer mains and laterals, sidewalks, drives, snow and ice removal from paved roadways, sidewalks, pedestrian walk, driveways and parking areas of the Property, lawn care, including landscaping, fertilizing, watering, weed control, tree pruning, grass cutting, edging and trimming and such actions as may be necessary to maintain the Common Elements in compliance with all applicable laws, codes and ordinances. All expenses of the Association, except as otherwise set forth

in this Declaration and/or the By-Laws, and/or the Rules and Regulations shall be charged to the Unit Owners as a Common Expense.

12.3 Prohibition Against Structural Changes by Owner. A Unit Owner shall not, without first obtaining the written consent of the Board of Directors of the Association, and approval from the Town of Delafield Zoning Administrator, make or permit to be made any structural alterations, or major changes or improvements to his Unit, or in or to the exterior of the Building in which his Unit is located or any Common Element, including, but not limited to any Limited Common Elements and facilities or make or install any improvements or equipment which may affect other Unit(s) or the Owner(s) of other Unit(s). A Unit Owner shall not perform, or allow to be performed, any act which will impair the structural soundness or integrity of any Building, or the safety of property, or impair any easement or hereditament, without the prior written consent of the Association.

12.4 Decorating. Each Unit Owner shall have the exclusive right to paint, repaint, tile, panel, paper or otherwise refurbish and decorate the interior surfaces of the walls, ceilings, floors, and doors forming the boundaries of their Unit and all walls, ceilings, floors and doors within such boundaries, and to erect partition walls of a non-structural nature within their Unit.

12.5 Assumption by Association of Unit Maintenance. The Association may, by resolution adopted by the affirmative vote of the majority of all members (not merely the majority vote of the members present at a meeting at which a quorum is present) authorize the Association to assume responsibility, in whole or in part, for the maintenance, repair and/or replacement of some or all of those portions of the Units (such as windows, window frames, exterior doors, garage doors, patios, porches, decks, etc.) which affect the exterior appearance of Units in the Condominium, and to charge the expenses for same as a Common Expense. Any such resolution may be amended, modified and/or rescinded at any time by the affirmative vote of the majority of all members, provided, however, if work has been completed as to some, but not all, of the Units, work on the remaining Units shall be completed and paid for as a common expense pursuant to the original resolution so as to put all Units in a comparable state of repair.

12.6 Delegation of the Maintenance of Common Elements. Notwithstanding any other provision of this Declaration, the Association is hereby expressly granted the power to delegate to Unit Owners some or all of the routine maintenance of Common Elements and/or Limited Common Elements, and the expense of repair and/or replacement occasioned by the failure of the Unit Owner to properly maintain same shall be the responsibility of the Unit Owner. The delegation of maintenance responsibilities shall be as authorized in the Bylaws. The Association, at its option, may establish specific maintenance requirements for said delegated maintenance responsibilities in its Rules and Regulations.

12.7 Municipality Right to Perform Maintenance. In the event the Association does not property landscape or maintain any common element, the Town of Delafield may send written notice to the Association indicating that the Muncipality has determined that the common elements are not being properly landscaped and/or

maintained, and further indicating that the Municipality will perform such landscaping and/or maintenance if not properly done by the Association. The above referenced notice shall give the Association a minimum of seven (7) days to correct the problem. If the common element is not property maintained within the time granted, the City shall then have the authority to maintain such common element and shall have the right to charge the unit owners on a pro rata basis for any costs incurred as a result of the maintenance. Said costs shall be assessed as special charges pursuant to Section 66.0627, Wis. Stats. If such charges are not paid by any unit owner within the period fixed by the City, such charges shall become a lien upon the unit owner's unit as provided in Section 66.0627, Wis. Stats., and shall be extended upon the tax rolls as a delinquent tax against the unit owner's unit as provided in Section 66.0627, Wis. Stats.

13. DESTRUCTION AND RECONSTRUCTION.

13.1 Repair and Reconstruction. In the event of a partial or total destruction of the Common Elements, they shall, subject to the provisions of Section 13.2 below, be rebuilt and repaired as soon as practicable and substantially to the same design, plan and specifications as originally built. On reconstruction the design, plan and specifications of any building or Unit may vary from that of the original upon approval of the Association and the Unit Owner; provided, however, that the number of square feet of any Unit may not vary by more than five percent (5%) from the number of square feet for such Unit as originally constructed, and the location of the Unit shall be substantially the same as prior to the damage or destruction.

13.2 Assessments and Partition. In the event that the proceeds of any insurance collected are insufficient to pay the estimated or actual costs of repair or reconstruction, the excess cost shall be a Common Expense; provided, however, that in the event of damage to an extent more than the available insurance, this Condominium shall be subject to an action for partition, upon obtaining the written consent of the Unit Owners having no less than seventy-five percent (75%) of the votes. In the event of partition, the net proceeds of sale, together with any net proceeds of insurance shall be considered as one fund and shall be divided among all Unit Owners in proportion to their Percentage Interest and shall be distributed in accordance with the priority interests in each Unit.

14. INSURANCE.

The Association shall obtain and maintain fire and broad form extended coverage insurance on the Buildings, General Common Elements, Units, and Limited Common Elements ("Covered Elements") in an amount. not less than the full replacement value of the of the Covered Elements, including endorsements for automatic changes in insurance coverage as fluctuating values may warrant, contingency endorsements covering nonconforming use and a Special Condominium Endorsement. Each Unit Owner shall obtain and maintain fire, casualty, and special form insurance coverage all personal property located therein for not less than the full replacement value thereof. Association Insurance coverage shall be written in the name of the Association as trustee for each of the Unit Owners and their respective Mortgagees in accordance with their Percentage Interest. Premiums shall be a Common Expense. To the extent the Board determines it is reasonably possible at a reasonable price, the insurance shall provide that the insurer

waives its rights of subrogation as to any claim against Unit Owners, the Association, and their respective servants, agents and guests, and that the insurance cannot be canceled, invalidated nor suspended on account of conduct of any one or more Unit Owners, or the Association, or their servants, agents and guests, without thirty (30) days prior written notice to the Association giving it opportunity to cure the defect within that time. The amount of protection and the types of hazards to be covered shall be reviewed by the Board of Directors of the Association at least annually and the amount of coverage may be increased or decreased at any time as deemed necessary as determined by the Board of Directors to conform to the requirements of full insurable value. The amount of protection and the types of hazards to be covered shall be reviewed by the Board annually and the amount of coverage may be increased or decreased at any time it is deemed necessary by the Board to conform to the requirements of replacement value insurance. Any Mortgagee may receive an insurance certificate upon ten (10) days prior written notice.

In the event of partial or total destruction of the all or part of the Condominium insured hereunder, and the repair or reconstruction of the same in accordance with the Section 13 hereof, the proceeds of such insurance shall be paid to the Association as trustee to be applied to the cost thereof. If it is determined not to reconstruct or repair, then the insurance proceeds together with the net proceeds of sale of the property shall be distributed to the Unit owners and their mortgagees, if any, as their respective interests may appear, in the manner provided in Section 13.2.

If insurance coverage is available to combine protection for the Association and some or all of the Unit Owners' personal property, located on or about the individual Units, the Board of Directors is hereby given discretionary power to negotiate and obtain such combination of protection on an equitable cost-sharing basis under which the Unit Owner would be assessed individually for the amount of insurance the Association includes in such policies for the Unit owner's additional protection. Copies of all such policies shall be provided to each Mortgagee. Individual Unit Owners may or may not be given the option to refuse participation in such combined insurance. Nothing contained in this paragraph shall be deemed to prohibit any Unit Owner, at the unit owner’s expense, from obtaining any additional insurance coverage on the Unit.

The Association shall provide public liability insurance covering the Common Elements in such amounts as may be determined at the discretion of the Board of Directors from time to time; provided, however, the amount of coverage shall not be less than One Million Dollars ($1,000,000.00) per single occurrence. All premiums for such insurance shall be Common Expenses. Each Unit Owner shall have the right to insure its own Unit for personal benefit. The Association shall also provide workman's compensation insurance when appropriate and may provide directors' and officers' liability insurance and fidelity bonds on such officers and employees in such amounts and with such coverage, as is determined by the Board of Directors to be necessary or advisable from time to time.

All required insurance shall be issued by an insurance company with a minimum of an A general policyholder's rating and of a class III financial size category in the Best's Key Rating Guide.

15. COVENANT FOR ASSESSMENTS.

15.1 Agreement to Pay Assessment. The Declarant for each Unit owned by it hereby covenants, and each Owner of any Unit by the acceptance of a deed therefore, whether or not it be so expressed in the deed shall be deemed to covenant and agree with each other and with the Association to pay to the Association for the purpose provided in this Declaration, the share of the Common Expenses of Association assessed against such Owner, as well the Unit itself. Except as otherwise provided herein, "Common Expenses" shall be any and all expenses incurred by the Association in connection with the management of the Condominium, the maintenance and repair of the Common Elements and administration of the Association, which shall include, by way of illustration and not limitation, utilities, insurance, management services, landscaping, the clubhouse, and other amenity maintenance and servicing, assessments from the master association, reserves, capital improvements, office supplies and such other reasonable and necessary expenses as determined by the Association's Board of Directors from time to time. Such Assessments shall be fixed, established, and collected from time to time in the manner provided in the By-laws. No Unit Owner may exempt them self from any Assessment by waiver of use and enjoyment of any of the Common Elements or by abandonment of their Unit.

15.2 Purpose of Assessments. The Assessments levied by the Association shall be used exclusively to promote the recreation, health, safety, and welfare of the Members and for the improvement and maintenance of the Common Elements, and such emergency repairs as the Association may deem necessary and such other purposes as are permitted by the terms of the Board of Directors of the Association. Notwithstanding the foregoing, the Association shall not be liable or responsible for, or in any manner a guarantor or insurer of, the health, safety or welfare of any Unit Owner, occupant, or user of any portion of the Property including, invitees, agents, servants, contractors, or subcontractors or for any property of any such persons. Without limiting the generality of the foregoing, each Unit Owner and each other person having an interest in or lien upon, or making a use of, any portion of the Property shall be bound by this Section and shall be deemed to have automatically waived any and all rights, claims, demands and causes of action against the Association arising from or connected with any matter for which the liability of the Association has been disclaimed in this Article.

15.3 General Assessments. The Board of Directors of the Association shall from time to time, and at least annually, prepare a budget and fix the General Assessment, which shall include reserves for replacement of Common Elements.

15.4 Special Assessments. In addition to the General Assessments authorized above, the Association may levy Special Assessments for the purposes of: (a) defraying, in whole or in part, the costs of any acquisition, construction, reconstruction, repair or replacement of a capital improvement and/or personal property for common use; (b) offsetting shortages resulting from non-collection of annual or special assessments or underestimation of same; and (c) unusual or unpredicted costs including but not limited to the cost of collecting annual or special assessments or enforcement of the provisions of the Declaration, By-laws and/or Rules & Regulations.

15.5 Special Assessments Against a Particular Unit. Special assessments may be made by the Board of Directors of the Association against a particular Unit Owner and his Unit for:

(a) Costs and expenses (anticipated or incurred) for damage to the Common Elements caused by or at the direction of that Unit Owner or guests or tenants of the Unit Owner or other occupants of the Unit;

(b) Costs, expenses and actual attorneys' fees incurred in, or in anticipation of, any suit, action or other proceeding to enforce the Act, the Declaration, the By-Laws, or the Rules and Regulations where there is found to be a violation thereof;

(c) Costs and expenses (anticipated or incurred) for emergency repairs to a Unit;

(d) Liabilities, costs and expenses incurred by the Association as a result of any temporary or permanent condition or defect in the Unit or any Limited Common Elements;

(e) Interest due on General Assessments and Special Assessments;

(f) Forfeitures and other penalties as provided for in the By-Laws and/or Rules and Regulations levied by the Board for violations of the Act, the Declaration, the By-Laws, or the Rules and Regulations by a Unit Owner of the tenants or guests of the Unit Owner or occupants of a Unit.

(g) Costs and expenses incurred by the Association for the maintenance, repair and/or replacement of Common Elements and facilities resulting from the failure of a Unit Owner to perform delegated maintenance.

(h) Sums due the Association under the Declaration, the By-Laws, or the Rules and Regulations, including, among others, those pursuant to Sec. 8.2 and/or Sec. 19.1 of this Declaration.

(i) All other costs and expenses anticipated or incurred by the Association which are subject to special assessments as provided under this Declaration or the By-Laws.

15.6 Working Capital. Each purchaser of a Unit from Declarant shall pay to the Association, at time of conveyance of the Unit by Declarant, for working capital purposes, a sum equal to _____, to be allocated for such purposes as the Association may determine in its discretion, except those _____, shall be submitted directly to the Master Association. As long as Declarant is in control of the

Association, Declarant shall not use any of said working capital funds to defray Declarant's expenses or construction costs.

15.7 Uniform Rate of Assessment. Both Annual Assessments and Special Assessments must be fixed at a uniform rate for all Units subject to Assessment; provided, however, the Association shall assess an individual Unit for all sums due solely from that Unit as provided in Section 15.5 above.

15.8 Date of Commencement of Assessments. The General Assessments provided for herein shall be payable in monthly installments and the monthly installments shall commence as to each Unit on the date of the conveyance of said Unit by the Declarant. The first annual assessment for each Unit shall be adjusted and prorated according to the number of months then remaining in the calendar year. Partial months shall be prorated on a daily basis. Written notice of the General Assessment shall be sent to every Owner subject thereto. The due dates shall be established by the Board of Directors. The Association shall have the authority to modify Assessments during any fiscal year. The Association shall, upon demand, and for a reasonable charge, furnish a certificate signed by an officer of the Association setting forth whether the assessments on a specified Unit have been paid.

15.9 Declarant's Obligation for Common Expenses During Period of Declarant Control. Notwithstanding anything to the contrary herein, as set forth during the period of Declarant control of the Association as described in Section 10.3 above and under Sec. 703.15 (2)(c), Wis. Stats., no General Assessments shall be assessed against any Unit owned by Declarant for any time period prior to the first day of the first month following the commencement of actual occupancy of the Unit for residential purposes. During the period of Declarant Control, however, if any unit owned by the Declarant is exempt from assessments for common expenses until the unit is sold, the total amount assessed against units that are not exempt from assessments may not exceed the amount that equals nonexempt units' budgeted share of common expenses, based on the anticipated common expenses set forth in the annual budget. The Declarant is liable for the balance of the actual common expenses.

15.10 Lien for Assessments. All Assessments, when due, together with interest thereon and actual costs of collection, as provided herein, shall become a personal liability of the Unit Owner and also a lien, until paid, on such Unit in favor of the Association. Such lien shall be superior to all other liens and encumbrances on such Unit, except only for:

(a) Liens of general and special taxes; and

(b) A Lien for all sums unpaid on a first Mortgage, or on any Mortgage to the Declarant, duly recorded in the Washington County, Wisconsin, Register of Deeds Office, prior to the making of such Assessment, including all unpaid obligatory advances to be made pursuant to such Mortgage and all amounts advanced pursuant to such mortgage and secured by the lien thereof in accordance with the terms of such instrument; and

(c) Mechanics liens filed prior to the making of the Assessment;

(d) All sums unpaid on any Mortgage loan made pursuant to Section 45.80 Wis. Stats.; and

(e) A lien under Section 292.31 (8) (i) or 292.81, Wis. Stats.

All other lienors acquiring liens on any Unit after this Declaration has been recorded shall be deemed to consent that such liens shall be inferior to future liens for Assessments, as provided herein, whether or not such consent be specifically set forth in the instruments creating such liens.

To evidence a lien for sums assessed pursuant to this Declaration, the Association may prepare and file a written notice of lien in any manner allowed by law at the time of filing of the lien. No notice of lien shall be filed until there is a delinquency in payment of the Assessment. Such lien may be foreclosed or otherwise enforced in any manner permitted by law at the time of enforcement. Except to the extent limited or prohibited by applicable law in effect at that time, the Association shall be entitled to recover all costs and expenses of filing the notice of lien, and all costs and expenses incurred by the Association in and/or relating to such action, including but not limited to reasonable attorney's fees. All such costs and expenses shall be secured by the lien. The Owner shall also be required to pay to the Association any Assessments against the Unit which shall become due during the period of foreclosure. The Association shall have the right and power to bid at the foreclosure sale or other legal sale and to acquire, hold, convey, lease, rent, encumber, use, and otherwise deal with the Unit as the Owner thereof.

Any encumbrancer holding a mortgage or other lien on a Unit may pay, but shall not be required to pay, any amounts secured by the lien created by this Section, and upon such payment such encumbrancer shall be subrogated to all rights of the Association with respect to such lien, including priority.

The Association shall, upon written request, report to any encumbrancer of a Unit any unpaid assessments remaining unpaid for longer than sixty (60) days after the same shall have become due and any default in the performance by the individual Unit of any obligation under the this Declaration, the By-Laws or the Rules and Regulations, which is not cured within sixty (60) days; provided, however, that such encumbrancer first shall have furnished to the Association written notice of such encumbrance.

15.11 Effect of Non-payment; Remedies. Any Assessments not paid when due shall be delinquent. Any Assessment or installment thereof not paid within ten (10) days after the due date shall bear interest from the due date at a rate of interest which is two percent (2%) higher than the rate prescribed by the Wisconsin Statutes to be collected upon execution upon judgment. (In lieu of charging such interest, the Board may, from time to time, fix a reasonable late fee for each month or fraction thereof that such assessment is not paid.) All payments on account shall be first applied to the

interest or late charge, if any, and then to the assessment payment first due. The Association may bring an action at law against any or all past or present Unit Owners, occupants and tenants personally obligated to pay the same, or foreclose the lien against the property. A suit to recover a money judgment for unpaid assessments hereunder may be maintainable without waiving the lien securing the same. Except to the extent limited or prohibited by applicable law in effect at that time, the Association shall be entitled to recover all costs and expenses incurred by the Association in and/or relating to such action, including but not limited to reasonable attorney's fees. If any installment of any assessment becomes delinquent, the privilege of paying such assessment in installments may, at the option of the Association, be terminated and, if such delinquent installment be of an annual assessment, the entire annual assessment for the remainder of the fiscal year, or if the delinquent installment be of a special assessment, the entire special assessment, may, at the option of the Association, be declared, without further notice, due and payable and, in such event, same shall be considered delinquent. The Association shall be entitled to recover from the applicable Unit Owners responsible for payment (past or present), jointly and severally, all costs and expenses of collection, including but not limited to reasonable attorney's fees.

15.12 Sale or conveyance. The Sale or transfer of any Unit shall not affect the assessment lien. The sale or transfer of any Unit pursuant to the foreclosure of a mortgage or other lien having priority as set forth in Section 15.10 shall extinguish the lien of such assessments (to the extent of the priority of such mortgage or other lien) as to payments which became due prior to such sale or transfer. No sale or transfer pursuant to foreclosure shall relieve such Unit from liability for any Assessments which thereafter become due or from the lien thereof.

15.13 Prohibited Voting. A Unit Owner shall be prohibited from voting at a meeting of the Association if the Association has recorded a statement of condominium lien on the Owner's Unit and the amount necessary to release the lien has not been paid at the time of the meeting.

15.14 Statutory Reserve Account. The Declarant elects not to establish a Statutory Reserve Account at the time of creation of this condominium. Pursuant to the provisions of sec. 703.163 (4), Wis. Stats., the issue of a Statutory Reserve Account shall be addressed at the first annual meeting of the Association held after, or at a special meeting of the Association held within one year after, the expiration of the period of Declarant control.

15.15 Association Dues on Unbuilt Units. In the event units are created but no construction has occurred on these pads, association dues are not payable for the first twelve months after the creation of the vacant unit. In the event construction has not completed within twelve months, and to acknowledge the reduced cost burden associated with unbuilt units, special provision is made to assess the owners of these vacant pads thirty-five percent of the dues assessed on the remaining units. This special provision shall not apply to the Declarant if the Declarant instead opts to fund association shortfalls.

16. PARTITION OF COMMON ELEMENTS PROHIBITED.

There shall be no partition of the Common Elements through judicial proceedings or otherwise, except as otherwise provided in the Act or this Declaration, until this Declaration is terminated and the property is withdrawn from its terms or from the terms of the applicable statutes regarding Unit ownership or condominium ownership; provided, however, that if any Unit shall be owned by two or more co-owners as tenants in common or as joint tenants, nothing contained herein shall be deemed to prohibit a voluntary or judicial partition (by sale, but not in kind) of said single Unit as between such co-owners. No Unit may be subdivided or separated.

17. CONVEYANCE TO INCLUDE INTEREST IN COMMON ELEMENTS AND FACILITIES AND LIMITED COMMON ELEMENTS.

The percentage of the undivided interest in the Common and Limited Common Elements and facilities shall not be separated from the Unit to which it appertains. No Unit owner shall execute any deed, mortgage, lease, or other instrument affecting title to such Unit ownership without including therein both the Unit owner's interest in the Unit and the corresponding percentage of ownership in the Common and Limited Common Elements and facilities, it being the intention thereof to prevent any severance of such combined ownership. Any such deed, mortgage, lease, or other instrument purporting to affect the one without including also the other shall be deemed and taken to include the interest so omitted even though the latter is not expressly mentioned or described therein.

18. EASEMENTS, RESERVATIONS AND ENCROACHMENTS.

18.1 Utilities. Easements may hereafter be declared and granted through or over the Common Elements by the Association, provided, however, that as long as Declarant owns any unsold Unit, no easement shall be granted by the Association without Declarant's prior written consent. Easements for the benefit of Unit Owners are hereby declared and granted, for utility purposes, for all utility service lines now existing or hereafter installed by or with the consent of Declarant over, under, along and on any part of the Common Elements and Limited Common Elements and facilities.

18.2 Construction Easement. Notwithstanding anything to the contrary in this Declaration, the Condominium Plat, By-laws, or Rules and Regulations, until Declarant shall have constructed and sold all Buildings and Units, completed all improvements to the Common Elements and satisfied all of its rights and obligations under any or all of the foregoing, Declarant reserves an easement for itself and its duly authorized agents, representatives, and employees, over portions of the Common Elements and any Units owned by Declarant for construction or renovation on the Property or the Expansion Real Estate or related purposes including: storing tools, machinery, equipment, building materials, appliances, supplies and fixtures; maintaining and correcting drainage of surface, roof or storm water; cutting any trees, bushes, or shrubbery; grading the soil or taking any other action reasonably necessary. In the event the Declarant exercises its rights under this Section, the Declarant shall upon, completion of the construction, promptly restore the affected property as closely as possible to the condition it was in prior to the construction. Each Unit Owner hereby acknowledges that the activities of the Declarant may temporarily impair the view and cause inconveniences to the Unit Owners.

18.3 Easement to Facilitate Sales. The Declarant reserves the right to use the Clubhouse Building or any Units owned or leased by the Declarant as models, management offices, sales offices (for this and other projects) or customer service offices. The Declarant reserves the right to relocate the same from time to time within the Property; upon relocation, the furnishings thereof may be removed. The Declarant further reserves the right to maintain on the Property such advertising signs as may comply with applicable governmental regulations, which may be placed in any location on the Property and may be relocated or removed, all at the sole discretion of the Declarant. The Declarant shall have the right to restrict the use of certain Common Element parking spaces for sales purposes and to use such spaces for sales purposes. Further, the Declarant shall have the right to erect, maintain, relocate, and remove temporary offices on the Property. The reservation of this easement to facilitate sales also applies to the Expansion Property. This easement shall continue until the Declarant has sold all the Units it owns.

18.4 Encroachments. In the event that by reason of the construction, reconstruction, settlement, or shifting of any of the buildings or the design or construction of any Unit, any part of the Common Elements and facilities, or Limited Common Elements, encroaches or shall hereafter encroach upon any part of any Unit, or any part of any Unit encroaches or shall hereafter encroach upon any part of the Common Elements and facilities, or Limited Common Elements, or any portion of any Unit encroaches upon any part of any other Unit, valid easements for the maintenance of such encroachment are hereby established and shall exist for the benefit of such Unit so long as all or any part of the building shall remain standing, and Unit and Common Element boundaries shall be as provided in the Act. Provided, however, that in no event shall a valid easement for any encroachment be created in favor of the owner of any Unit or in favor of the owner or owners of the Common Elements or facilities, or Limited Common Elements, if such encroachment occurred due to the willful and knowing conduct or acquiescence of said owner or owners.

18.5 Access Utility and Storm Water Easements. The Condominium Plat for The Reserve at Welshire Farm Condominium sets forth various easements, including, but not necessarily limited to, Utility, Access, Sanitary Sewer, Storm Water Management Access, and Drainage Easement areas. All of said easement areas are for the use and benefit of the lands within The Reserve at Welshire Farm Condominium, as described on the attached **Exhibit A**, as well as all of the Expansion Lands, as described on the attached **Exhibit B**. To the extent said easement areas are within lands now or (after expansion of the Condominium) hereafter included within The Reserve at Welshire Farm Condominium, Declarant retains a permanent, perpetual, and non-exclusive easement in each of said easement areas, for the purposes intended, for the use and benefit of the lands described on the attached **Exhibit C**. To the extent that said easement areas are within the Expansion Lands, as described on the attached **Exhibit B**, or so much thereof as are not hereafter added to The Reserve at Welshire Farm Condominium by expansion of the Condominium, Declarant hereby grants to The Reserve at Welshire Farm Condominium, a permanent, perpetual and non-exclusive easement in each of said areas, for the purposes intended, for the use and benefit of the lands now or hereafter included within The Reserve at Welshire Farm Condominium. A separate document titled "The Reserve at Welshire Farm Easement Agreement" may be executed and recorded for the purpose of further

documenting and defining said easements, including but not limited to maintenance and repair responsibilities, and for the purpose of preventing the termination of the easements in the event of the amendment of this Declaration and/or termination of the condominium status.

18.6. Binding Effect. All easements and rights described in this Section 18 are easements appurtenant, running with the land. All easements and rights described herein are granted and reserved to and shall inure to the benefit of and be binding on, the Declarant, its successors and assigns, and on all Unit Owners, purchasers and mortgagees and their heirs, personal representatives, successors and assigns. The Association or the Declarant shall have the authority to execute and record all documents necessary to carry out the intent of this Section 18.

19. ARCHITECTURAL CONTROL.

19.1 Architectural Control Authority. No exterior additions or alterations (including painting or decorating) of any Buildings, porches, patios, decks, awnings, additional fences, or changes in existing fences, hedges, shrubs, trees, landscaping, walls, walkways and other structures or plantings, or improvement to or enclosure of any Limited Common Element, shall be constructed, erected, planted or maintained (except such as are installed or approved by the Declarant in connection with the Construction) of the building until the plans and specifications showing the nature, kind, shape, height, materials, location, color, approximate cost, proposed impact on the appearance of the Condominium, and a statement identifying the project contractor shall have been submitted to and approved in writing by the Board of Directors of the Association. Approval may be granted or denied at the discretion of the Board. Approval is further subject to compliance with the provisions of Sec. 703.13 (5m) of the Wisconsin Statutes. The approval of any work shall not in any way be construed so as to impair the right of the Association to undertake any decoration of or alteration to any Common Element, including any such work as may alter or eliminate the Owner's work approved, and no such decoration or alteration work by the Association shall create any liability by the Association to such Owner. Neither the members of the Board of Directors nor its designee(s) representative(s) or committee members shall be entitled to compensation to themselves for services performed pursuant to this paragraph, but compensation may be allowed to independent professional advisors retained by the Board or their designee(s). Any costs and expenses incurred by the Association relative to any application for approval (whether or not approval is granted) and/or enforcement of the provisions of this section, including but not limited to reasonable actual fees of attorneys, architects, engineers, surveyors, designers and/or construction experts, may be charged by the Association as a special assessment against the applicable Unit. In addition to the Association approval required above, the Unit Owner instituting any additions, modifications or changes is responsible, at the sole cost and expense of the Owner(s) of such Unit, for obtaining any required governmental approvals. The Owner(s) of such Unit (jointly and severally) shall further indemnify and hold harmless the Association and all other Unit Owners, upon demand, from all loss, costs, expenses, damages, and costs of enforcement, including but not limited to fines, reasonable attorney's fees, and costs of modification and/or removal, resulting from the failure of the owner(s) of such Unit to properly obtain Association and/or governmental approval.

19.2 Declarant Control. During the period of Declarant Control, Declarant shall have the exclusive right to act as the representative of the Board for Architectural Control purposes.

20. MORTGAGEE RIGHTS. Mortgagees of Units shall have the rights set forth below. In the event any provision of this Article conflict with any other provision of this Declaration, The Articles of Incorporation of the Association, or the By-Laws of the Association (collectively, the "project documents"), the provision more favorable to a Mortgagee shall control. If any provision of this Article conflicts with any required minimum provision of the Act, the more restrictive provision shall control. Mortgagee Rights are as follows:

20.1 Right of 1st Refusal. No right of first refusal in the condominium project documents shall adversely impact the rights of a mortgagee or its assignee to:

20.1.1 Foreclose or take title to a condominium Unit pursuant to the remedies in the mortgage;

20.1.2 Accept a deed or assignment in lieu of foreclosure in the event of default by a mortgagor; or

20.1.3 Sell or lease a Unit acquired by the mortgagee or its assignee.

20.2 Amendments to Project Documents. Amendments to the project documents of a material adverse nature to mortgagees must be agreed to by mortgagees that represent at least 51% of the votes of the Units that are subject to mortgages. Amendments to annex property and/or Units to the Condominium pursuant to Section 6 of this Declaration shall not be deemed or construed as amendments of a material adverse nature to mortgages.

20.3 Termination of Condominium. Any action to terminate the legal status of the condominium after substantial destruction or condemnation occurs, or for other reasons, must be agreed to by mortgagees that represent at least 51% of the votes of the Units that are subject to mortgages.

20.4 Implied Approval Presumed. If otherwise allowed by law, implied approval by a mortgagee shall be assumed when a mortgagee fails to submit a response to any written proposal for an amendment within 60 days after it receives proper notice of the proposal, provided the notice was delivered by certified or registered mail, with a "return receipt" requested.

20.5 Right to Notice. Any mortgagee of a Unit, and any guarantor of the mortgage, upon the submission of a request to the Association in writing delivered to the Registered Agent of the Association, shall be entitled to receive timely written notice from the Association of the following matters:

20.5.1 Any condemnation or casualty loss that affects either a material portion of the project or the Unit securing its mortgage;

20.5.2 Any 60-day delinquency in the payment of assessments or charges owned by the Owner of any Unit on which it holds the mortgage;

20.5.3 Any lapse, cancellation, or material modification of any insurance policy maintained by the Association; and

20.5.4 Any proposed action that requires the consent of a specified percentage of mortgagees.

20.6 Priority of Insurance Proceeds. Neither a Unit Owner nor any other party shall have priority over any rights of the first mortgagee of the Unit pursuant to its mortgage in the case of payment to the Unit Owner of insurance proceeds or condemnation awards for losses to or a taking of condominium Units(s) and/or Common Elements.

21. REALLOCATION OF BOUNDARIES AND MERGER AND SEPARATION OF UNITS.

Unit Owners may, subject to the approval of the Board of Directors of the Association, reallocate Unit boundaries between adjoining Units, merge two adjoining Units into one Unit and/or separate a previously merged Unit into the number of Units which originally existed, upon compliance with the applicable provisions of the Act. The Board of Directors may approve or deny such request in its sole discretion and may condition any approval upon compliance with such conditions as it may determine to be reasonable and appropriate. All work in connection with reallocation, merger, or separation shall be completed in a good, workmanlike manner and free from all liens. The Unit Owner(s) who initiate or whose actual boundaries are relocated, merged, or separated shall indemnify and hold harmless the other Unit Owners, the Board, the Declarant and the Association from and against all claims of third parties for personal injury or property damage from work performed in connection with any relocation, merger or separation. The Board of Directors shall have the authority to assess a Special Assessment against any Unit for any cost incurred by the Association as a result of nonpayment of relocation cost by the Unit Owner.

A reallocation of boundaries between adjoining Units shall not result in any change in the number of votes, the Percentage Interests, or responsibility for Association expenses and assessments for either Unit. In the event two adjoining Units are merged into one Unit, the resulting Unit shall have the same number of votes at meetings of the Association as the total number of votes assigned to the two previous Units (a total of 2 votes, 1 for each of the original Units), and shall have the same undivided Percentage Interest in the Common Elements as the total undivided Percentage Interest applicable to the two previous Units. To avoid any increased burden for Association expenses on other Units and the owners thereof, the resulting merged Unit shall be responsible for the same share of Association expenses and assessments (both Annual and Special) as the total which would

have been applicable to the two Units if they had not been merged. If a merged Unit is later separated into 2 units, each of the 2 separated Units shall then have the originally allocated vote, Percentage Interest, and assessment responsibility.

22. CONDEMNATION

In the event of a "taking under the power of eminent domain" as defined in the Act, the Association shall proceed with rebuilding, relocation, or restoration and/or an allocation of any award as provided in the By-laws or, if not provided for in the By-laws, in the Act. In any event, if the taking under the power of eminent domain is to the extent where the remaining Condominium portion has been diminished to such an extent that reconstruction or restoration is not practical, the Condominium shall be subject to an action for partition upon obtaining the written consent of the Unit Owners having 75% or more of the vote. In the case of partition, the net proceeds of sale, together with any net proceeds of the award for taking, shall be considered as one fund and shall be divided among all Unit Owners in proportion to their Percentage Interest and shall be distributed in accordance with the priority of interests in each Unit. A taking of all or part of a Unit may not include any of the Percentage Interests or vote appurtenant to the Unit. The Owner of each Unit taken shall have the individual right of appeal of the necessity of taking and of the condemnation award made for the taking. The Association shall have the right of appeal of the necessity of taking of the Common Elements and the right of appeal of the condemnation award made for the taking of the Common Elements. An appeal by the Association shall be binding upon the Unit Owners for the necessity of taking or the condemnation award made for the taking of the Common Elements. Unit Owners having an interest in the ownership of Limited Common Elements may individually or as a group appeal the necessity of taking or the condemnation award made for the taking of the Limited Common Elements. The Association shall act as the designated agent and/or attorney-in-fact for each Unit Owner and their Mortgagees for the purpose of representing, negotiating, and settling any proceeds or awards to be made to the Association or any Unit Owner on account of any casualty damage to the Condominium or eminent domain proceedings which involve the Condominium.

23. INTENTIONALLY LEFT BLANK

24. GENERAL PROVISIONS.

24.1 Enforcement & Restriction Precedence. The Association, or any Owner, shall have the right to enforce, by any proceeding at law or in equity, all restrictions, conditions, and reservations, now or hereafter imposed by the provisions of this Declaration, the By-laws and Rules and Regulations. Failure to enforce any covenant or restriction herein contained shall in no event be deemed a waiver of the right to do so thereafter. The Declarant, its successors and assigns, and all parties hereafter having an interest in the Property, are subject to all applicable rules, codes, regulations, and ordinances of the City of Oconomowoc, Waukesha County, the State of Wisconsin, and the federal government, and the same may be more restrictive than these the restrictions, conditions, and reservations, now or hereafter imposed by the provisions of this Declaration, the By-laws and Rules and Regulations. In the event there is a conflict between the requirements of Declaration, the By-laws and Rules and Regulations

and any provision of the City, County, State or federal law or regulation, the more restrictive provisions shall apply.

24.2 Severability. If any provision, or any part hereof, of this Declaration or the application thereof to any person or circumstances shall, to any extent, be invalid or unenforceable, the remainder of this Declaration, or the application of such provision, or any part thereof, to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby, and each provision or any part thereof, of this Declaration shall be valid, and be enforced to the fullest extent.

2**4.3 Termination.** This Declaration may be terminated in the manner allowed by the Act as of the time of termination.

24.4 Notices. All notices and other documents required or permitted to be given by this Declaration or the By-Laws of the Association to a Unit Owner shall be sufficient if given to one (1) Owner of a Unit regardless of the number of Owners who have an interest therein. All Owners shall provide the Association with an address for the mailing and emailing or service of any notice or other documents and the Association shall be deemed to have discharged its duty with respect to the giving of notice by mailing it, emailing it or having it delivered personally to such address as is on file with the Association.

24.5 Non-waiver. The failure of the Association to insist, in any one or more instances, upon the strict performance of any of the terms, covenants, conditions or restrictions of this Declaration, or to exercise any right or option herein contained, or to serve any notice or to term, covenant, condition or restriction, shall not be deemed a waiver of same, but such term, covenant, condition or restriction shall remain in full force and effect. The receipt by the Association of payment of any Assessment from a Unit Owner, with knowledge of the breach of any covenant hereof, shall not be deemed as a waiver of such breach, and no waiver by the Association of any provision hereof shall be deemed to have been made unless expressed in writing and signed by the Association.

24.6 Amendments. This Declaration may be amended in the manner allowed by the Act at the time of amendment (to the extent not subject to further restrictions as set forth in this Declaration); provided, however, that, as long as Declarant owns any unsold Unit and so long as the Condominium is subject to expansion as set forth in Section 6 above, no Amendment to this Declaration shall be effective unless consented to in writing by Declarant. No amendment shall adversely affect the rights of the City of Oconomowoc without City consent.

24.7 Registered Agent. Bryan Lindgren is hereby appointed by Declarant as the registered agent for the condominium. The address of said registered agent is: N27 W24025 Paul Court, Pewaukee, WI 53072. The registered agent may be changed in accordance with any provision allowed by law in effect at the time of such change. As of the date of filing of this Declaration, the provisions regarding the qualification, designation and filing of the name and address of the registered agent are set forth in Sec. 703.23, Wis. Stats. As set forth in said statutory section, if the Association is incorporated, the registered agent for the association shall be the registered agent for the condominium.

24.8 Assignment. The rights and obligations of Declarant may be assigned in any manner allowed by law at the time of assignment. Upon the recording of any such amendment, such assignee shall become "Declarant" under this Declaration and shall succeed to all such rights, powers, and obligations. Such amendment need be signed only by the assignor and assignee named therein

24.9 Number and Gender. Whenever used herein, unless the context shall otherwise provide, the singular number shall include the plural, the plural shall include the singular, and the use of any gender shall include all genders.

24.10 Captions. The captions and Article headings herein are intended only as matters of convenience and for reference and in no way define or limit the scope or intent of the various provisions hereof.

[SIGNATURES APPEAR ON FOLLOWING PAGE]

IN WITNESS WHEREOF, this Declaration has been duly executed as this _____ day of _____, 20___.

DECLARANT:

Welshire Farm, LLC,
a Wisconsin limited liability company

By: Neumann Developments, Inc., sole Member

By: _____
Bryan Lindgren, President

ACKNOWLEDGMENT

STATE OF WISCONSIN)
) ss.
COUNTY OF WAUKESHA)

Personally came before me this ____day of _____, 20___, the above named Bryan Lindgren, President of Neumann Developments, Inc. sole member of Welshire Farm, LLC, by its authority, and to me known to be the person who executed the foregoing instrument and acknowledged the same.

_____
[SEAL] Name:_____
Notary Public, State of Wisconsin
My commission:_____

CONSENT OF MORTGAGE HOLDER

_____, being the holder of the Mortgage on the property subject to this Declaration, hereby consents to the establishment of this Condominium and the recording of this Declaration and the Condominium Plat for this Condominium.

Date: _____, 2024

_____

By: _____
Print Name: _____
Title: _____

ACKNOWLEDGMENT

STATE OF WISCONSIN)
) ss.
COUNTY OF WAUKESHA)

Personally came before me this ____day of _____, 20___, the above named _____ of _____ and to me known to be the person who executed the foregoing instrument and acknowledged the same.

_____

[SEAL]

Print Name:_____
Notary Public, State of Wisconsin
My commission:_____

This instrument was drafted by:

Neumann Developments
Ryan Fritsch
N27 W24025 Paul Court, Suite 100
Pewaukee, WI 53072

EXHIBIT A

Legal Description

EXHIBIT B

Legal Description (Expansion Real Estate)

EXHIBIT C

Condominium Plat

EXHIBIT D

Unit Addresses

DECLARATION OF PROTECTIVE COVENANTS OF WELSHIRE FARM

THIS DECLARATION OF PROTECTIVE COVENANTS OF WELSHIRE FARM SINGLE FAMILY (the "***Declaration***") is made and entered this ____ day of _____, 20____, by WELSHIRE FARM, LLC, a Wisconsin limited liability company ("***Declarant***").

RECITALS

WHEREAS, Declarant owns the real estate located in the Town of Delafield, Waukesha County, Wisconsin, as more particularly described on Exhibit A attached hereto and incorporated herein by this reference (the "***Property***").

WHEREAS, upon approval and recording of the plat for the Subdivision (as hereinafter defined), the initial phase of the Subdivision will be a platted subdivision consisting of thirty seven (37) single family lots ("***Phase I***"), as more particularly described on Exhibit A and as depicted on Exhibit B, as they are attached hereto and incorporated herein.

Name and Return Address:

Welshire Farm, LLC
c/o Neumann Developments
N27 W24025 Paul Court, Suite 100
Pewaukee, WI 53072

Tax Key No(s). See Exhibit A

WHEREAS, when fully expanded, the Declarant anticipates that the lots created now or in the future in the Subdivision will be grouped in physical proximity and organized around different sets of building styles, with each such group known as a "Community". The Declarant anticipates that the Subdivision will eventually consist of up to three (3) communities, to be known as The Villas at Welshire Farm ("***The Villas***"), The Residences at Welshire Farm ("***The Residences***"), and The Estates at Welshire Farm ("***The Estates***"). By this Declaration, the Declarant desires to impose restrictions on three (3) communities in Phase I, which includes portions of The Villas, and to provide for the future inclusion of additional portions of The Villas, The Residences, and The Estates.

WHEREAS, As outlined in this Declaration, Phase I and expansion areas shall be managed by a Homeowner's Association, the "Association". Declarant may also form a "Master Association" which, in addition to managing the Association, may also manage one or more condominium communities within the Expansion Area. As part of this Master Association, Declarant may construct, or allow to be constructed in the future, one or more Common Improvements which shall be made available to all Lot Owners. Declarant may establish and impose certain provisions, restrictions, conditions, and easements with the Master Association. Provisions of the Master Association, if any, shall constitute covenants running with the land which shall be binding upon Declarant, its successors and assignees and all subsequent owners and occupants of all or any part of such real property.

WHEREAS, at the time of this Declaration, the Declarant desires to subject Phase I of the Subdivision, to the covenants, conditions, restrictions, reservations and easements hereinafter set forth, for the benefit of the Subdivision as a whole, and for the benefit of each Lot Owner (as hereinafter defined).

DECLARATION

NOW, THEREFORE, Declarant, as fee owner of the Property, hereby declares that Phase I of the Subdivision and all portions thereof shall be used, held, leased, transferred, sold, and conveyed subject to the covenants, conditions, restrictions, reservations and easements hereinafter set forth, which shall inure to the benefit of and shall pass with each Lot (as hereinafter defined) as covenants running with the land and shall apply to and bind all successors in interest, users and owners.

The general purpose of this Declaration is to: (1) promote the harmonious development of the Subdivision into a high quality residential community while protecting the natural beauty and quality of the environment; (2) help ensure that the Subdivision will become and remain an attractive community; (3) guard against the erection of poorly designed or poorly proportioned structures; (4) require harmonious use of building materials; (5) promote the highest and best residential development of the Subdivision; (6) require the erection of attractive homes in appropriate locations on building sites; (7) be in compliance with Municipal (as hereinafter defined) codes and ordinances; and (8) provide for the expansion of the Subdivision consistent with this Declaration.

ARTICLE 1. DEFINITIONS

Capitalized terms not otherwise defined in this Declaration shall have the assigned definitions:

1.1 "***Association***" shall mean Welshire Farm Homeowners Association, Inc., the members of which shall be all Owners (as hereinafter defined) of Lots (as hereinafter defined) in the Subdivision.

1.2 "***ACC***" shall mean the Architectural Control Board as established by the Declarant.

1.3 "***Amenity Area***" shall mean that area as more particularly described in Section 7.5. The area shall be a Common Area and any improvements which may be constructed in the Amenity Area shall be Common Improvements.

1.4 "***Association Insurance***" shall mean all policies of insurance as may be maintained by the Association under this Declaration.

1.5 "***Board***" or "***Board of Directors***" shall mean the governing body of the Association, elected according to the Bylaws.

1.6 "***Building***" shall mean any freestanding structure located in the Subdivision. A "***dwelling***" or a "***home***" is a Building intended for occupancy in accordance with Section 6.1.

1.7 "***Bylaws***" shall mean the Bylaws of the Association as adopted by the Board.

1.8 "***Common Areas***" shall mean the easements, Outlots [other than the Expansion Area], Amenity Area, Trail System, and those areas identified on that certain Plat of Subdivision as recorded in the Register's Office as Common Areas. Each Owner shall have an equal undivided interest in the Common Areas, and all deeds and other conveyances of any Lot shall be deemed to include such interest in the Common Areas, whether or not so specifically stated in any such deed or other conveyance.

1.9 "***Common Improvements***" shall mean all personal property, fixtures, structures, improvements, signs, Storm Water Facilities, landscaping, utilities, Mailbox CBUs, Buildings or other improvements made by the Developer or the Association in the Common Areas, cul-de-sac islands and medians.

1.10 "***Community***" shall mean a series of Lots designated in this Declaration or an amendment as being grouped together for purposes of administration of this Declaration.

1.11 "***County***" shall mean the County of Waukesha, Wisconsin.

1.12 "***Declarant***" shall mean Welshire Farm, LLC and its successors and assigns pursuant to Section 15.7 of this Declaration.

1.13 "***Declaration***" shall mean this Declaration as the same may be amended from time to time.

1.14 "***Developer***" shall mean Welshire Farm, LLC.

1.15 "***Director***" shall mean a member of the Board.

1.16 "***Documents***" shall mean the Articles of Incorporation of the Association, the Bylaws, the Rules, and this Declaration, as they may be amended from time to time.

1.17 "***Easement***" shall mean an area on a Lot or in the Subdivision to which has been granted the right of use to an Owner, the Association or a third party for a limited purpose and shall be identified as shown on the Plat. An Owner shall not build, plant or create any obstruction on, over, under or through an Easement, except as consistent with the express, written grant of said Easement rights.

1.18 "***Expansion Area***" shall mean the remainder of Outlot ____ as more particularly described on Exhibit A and as depicted on the Plat attached hereto as Exhibit B; plus any immediately adjacent lands.

1.19 "***Lot***" shall mean a platted lot intended for construction of a home as shown on the Plat. The reference to a Lot by a number shall mean that particular Lot as shown on the Plat. The term "Lot" will also include any platted lot intended for construction of a home as shown on any amendment to the Plat or additional plat of any Outlot, which lots are included in any amendment expanding the jurisdiction of this Declaration under Section 11.2.

1.20 "***Master Association***" shall mean the Olde Highlander Master Homeowners Association as may be created by the Declarant; the members of which shall be the Association

created to manage the Subdivision, including expansion areas and the Association, created to manage the condominium community, if any.

1.21 "***Mortgage***" shall mean a recorded first lien mortgage against a Lot or the vendor's interest under a recorded first lien land contract relating to a Lot.

1.22 "***Mortgagee***" shall mean the holder of a Mortgage.

1.23 "***Municipality***" or "***Municipal***" shall mean the Town of Delafield, Wisconsin.

1.24 "***Natural Materials***" shall mean any building material that is naturally forming or generally composed of natural materials. Examples shall include, but not be limited to wood, cement board, LP SmartSide Siding, brick, stone, plaster or other as determined by the ACC. Materials specifically excluded in this definition include, but are not limited to, vinyl, aluminum, fabricated wood panel wall sheathing or other materials as determined by the ACC.

1.25 "***Occupant***" shall mean the Owner and any other person residing in a Building.

1.26 "***Owner***" shall mean each fee simple owner or land contract vendee of a Lot. The Declarant is an Owner with respect to Lots to which it holds title.

1.27 "***Outlot***" or "***Outlots***" shall mean an outlot as shown on the Plat, and any subsequent plats. The reference to an Outlot by a number shall mean that particular Outlot as shown on such Plat.

1.28 "***Pet***" shall mean a domestic cat, a domestic dog, service animal and emotional support animal, a single caged bird or common small tank fish.

1.29 "***Plat***", "***Plat of Subdivision***", or "***Final Plat***" shall mean the Plat of Welshire Farm, as recorded with the Register's Office on the _____ day of _____, 20____ as Document No. _____ and attached hereto as Exhibit B.

1.30 "***Register's Office***" shall mean the office of the Register of Deeds for Waukesha County, Wisconsin.

1.31 "***Rules***" shall mean rules established by the Association governing the administration of the Common Areas and Common Improvements.

1.32 "***Storm Water Facilities***" shall mean the private storm water basins installed in Outlots _____ together with the easements as shown on the Final Plat.

1.33 "***Storm Water Management Agreement***" shall mean that certain Storm Water Management Practice Maintenance Agreement executed by Declarant and recorded with the Register's Office.

1.34 "***Storm Water Permit***" shall mean the permit as issued by the Municipality, as shall be assigned to the Association, for the maintenance and upkeep of the Storm Water Facilities.

1.35 "***Subdivision***" shall mean all of the Lots and Outlots, as more particularly described on Exhibit A and as depicted on the Plat attached hereto as Exhibit B.

1.36 "***The Villas***" shall mean the Community designated as The Villas at Welshire Farm. In Phase I, Lots ____ through ____ comprise The Villas.

1.37 "***The Residences***" shall mean the Community designated as The Residences at Welshire Farm.

1.38 "***The Estates***" shall mean the Community designated as The Estates at Welshire Farm.

1.39 "***Trail System***" shall mean the paved trail system and related amenities as may be located on and over certain Outlots as depicted on the Plat and further described in the Trail System Easement Agreement.

1.40 "***Trail System Easement Agreement***" shall mean that certain Perpetual and Permanent Trail System Access Agreement by and between Declarant and the Municipality and recorded with the Register's Office.

ARTICLE 2. ARCHITECTURAL CONTROL

2.1 Architectural Controls; Restrictions on Development.

2.1.1 Architectural Control Committee. So long as Declarant has title to any Lot subject to this Declaration, including the Expansion Area, the ACC shall consist of three (3) members appointed in writing by Declarant. The Declarant appointed members are not required to be Lot Owners in the Subdivision. All members of the ACC shall serve at the pleasure of the Declarant. The Declarant shall surrender the selection of the members of the ACC upon the earlier of: (a) thirty (30) days from Declarant's conveyance of the final Lot, including any Lots which may be platted within the Expansion Area as provided in this Declaration, to an Owner who has been granted an occupancy permit and intends to reside on the Lot; (b) ten (10) years from the date of this Declaration; or (c) Declarant's election to waive its rights to control the ACC. Upon Declarant's surrender of the ACC as provided above, the members of the ACC shall be elected by the Board, provided, however, that if selected by the Board, a representative of Declarant may serve on the ACC. Notwithstanding the election of the new members of the ACC, the approval of Drawings for the initial construction of a home on a Lot shall not be effective without the express prior consent of the Declarant; approval of Drawings for other matters will not require Declarant's approval. For the avoidance of doubt, for purposes of this Section a "bulk" or multi-Lot conveyance to a party who is not intending to occupy the property conveyed shall not be considered a conveyance for purposes of (a) above.

2.1.2 No Development Without Prior Approval. Not less than ten (10) days prior to each time any of the following is proposed to occur:

(a) commencement of construction of any Building or other improvements or alteration on any Lot; or

(b) the reconstruction of any Building or other improvements on any portion or portions of such property following a casualty loss thereto; or

(c) the demolition of any Building or other improvements on any portion or portions of such property; or

(d) the initial painting, or subsequent decoration or alteration of the exterior of any Building or other improvement on such property; or

(e) the installation of items such as, but not limited to, solar panels, wind-driven energy devices, awnings, enclosure, hot tub, deck, swimming pool, mailboxes, fences, berms or other features on any such property;

the Owner(s) of such property shall submit to the ACC for consideration as described below three (3) copies of written information, which shall include a survey of such property prepared by a licensed surveyor or the equivalent, as approved by the ACC for the particular submission, ("***Drawings***") showing:

(1) the location, size, elevations and type of Building(s) and other improvements, including, but not limited to, homes, garages and fences or other matters proposed to be erected or reconstructed on such property,

(2) detailed plans and specifications for construction or reconstruction, including building material, type and color, and plans to screen the demolition, construction or reconstruction from view,

(3) the proposed landscaping, including any fences or walls, and

(4) the proposed location and specifications for utilities servicing such improvements.

The Drawings shall be submitted in 11x17 format and reflect the proposals in (1) through (4) above, which are appropriate to be shown on the survey. Any of the actions described in clauses (a) through (e) above may be taken (subject to Section 2.1.3 below) on or after the date on which the ACC approves or does not object or is deemed to have done so as provided in Section 2.1.3 below, unless such time periods are waived by the ACC in its sole discretion where the ACC believes that such earlier commencement is consistent with the purposes of this Declaration. No action described in paragraphs (a) through (e) above shall take place without the approval by the ACC of the Drawings for such action, except if the action is the repair or replacement of previously approved exterior features with features that are identical or if the action is the repainting of an exterior surface with paint of the same color.

The Municipality may also require permits prior to proceeding with the development activities for the items listed above.

2.1.3 Standards and Procedural Matters of Consideration. The ACC shall not unreasonably refuse to consider submitted Drawings provided that any fees imposed for review have been paid. In considering any Drawings, the ACC shall consider, among other factors,

whether all of the improvements and the lighting, exterior finishes (such as materials, decorations, and paint color), landscaping, the placement and protection of trees and such other matters proposed in such Drawings comply with the terms of this Declaration and the Municipality's ordinances and otherwise are, in the ACC's sole opinion, in keeping with and do not detract from the harmony of the external design of, or depreciate any portion of the Property, whether then undeveloped, developed or in the process of development, even if the Drawings otherwise do not breach any other standard set forth in this Declaration. The ACC may approve Drawings (absolutely or conditionally), may object to Drawings (absolutely or conditionally), or may state that it has no objection to Drawings (absolutely or conditionally). Approval must be express and in writing. The failure of the ACC to approve, object to, or acquiesce conditionally as provided above within thirty (30) business days after submittal of the complete Drawings and payment of any review fees shall be deemed to be the ACC's acceptance of the Drawings as submitted. If the ACC objects to Drawings in whole or in part for any reason, the submitting Owner shall thereafter resubmit Drawings to the ACC with such revisions as are required. Each time an Owner so submits the Drawings, the ACC shall have the right to approve, acquiesce conditionally or object to the Drawings as described above in the time periods as measured from the last submittal. Following the ACC's approval of the Drawings, the improvements described therein shall be developed strictly in accordance with the approved Drawings and requirements. If the approved improvements are not completed within one (1) year of their initial approval, then such approval shall be deemed withdrawn and the same or different Drawings required to be submitted or resubmitted, as the case may be; provided that the ACC may, in its discretion, extend such period by up to an additional six (6) months if it reasonably determines that delay has been primarily caused by factors outside of the control of the Owner; and provided further that the initial driveway need not be completed until the time period specified.

2.1.4 Prior Approval for Changes. If after the completion of the improvements to an affected Lot, the Owner thereof desires to construct any additional improvements or to substantially alter the then existing improvements or the grade of the affected Lot, the Owner shall comply with the provisions of Section 2.1.2 above. A proposed alteration will be deemed substantial if it affects the grade of the affected Lot or the location or exterior appearance of the approved improvements.

2.1.5 Procedures and Budget. The ACC may set its own operating procedures consistent with this Declaration and any limitations hereafter imposed by the Board. The costs of operating the ACC shall be assessed by the Association as common expenses, except as permitted below. The ACC may, but need not, require the payment of a review fee in connection with the submittal of any Drawings pursuant to a written policy. The ACC may engage consultants (e.g., architects, engineers or attorneys) either on a general or on a case-by-case basis, and the costs thereof may be charged to the applicant. The members of the ACC shall not draw any compensation for serving thereon, but may be reimbursed for expenses incurred in performing their duties. All funds relating to the ACC shall be handled by the treasurer of the Association.

2.1.6 Separate Municipal Approval. Matters which require approval of the ACC may also require the approval of the Municipality. Obtaining approval from the ACC and from the Municipality is the sole responsibility of the Owner desiring approval. Approval of Drawings by the ACC shall not be deemed approval by the Municipality, and approval by the Municipality shall not be deemed approval by the ACC. ACC interpretations of Municipal ordinances are not binding on the Municipality.

2.1.7 Uniformity Standards. Certain standards of architectural control are set forth below. The ACC may adopt additional written standards of uniformity, setback, grading, landscaping, basements, roofing, or exterior, whether generally or for certain types of improvements. The ACC may enforce any standard even if it has, expressly or by acquiescence, permitted previous deviations from such standard.

2.1.8 Indemnification. Each member or former member of the ACC, together with the personal representatives and heirs of each such person, shall be indemnified, defended, and held harmless by the Association from and against any and all claims, actions, suits, proceedings (including criminal proceedings), losses, costs, damages and expenses, including, without limitation, reasonable attorneys' fees and costs, asserted against, incurred by, imposed in connection with, related to, or resulting from service as a member of the ACC, except as to matters resulting in a final determination of negligence or willful misconduct on the part of such member. In the event of settlement of such proceeding, indemnification shall be provided only in connection with such matters covered by the settlement as to which the Association is advised by counsel that the person to be indemnified has not been guilty of negligence or willful misconduct in the performance of such person as a member in the matter involved. This right of indemnification shall be in addition to all other rights and defenses. All liability, loss, damage, cost and expense incurred or suffered by the Association in connection with this indemnification shall be a common expense. Nothing in this subsection shall be deemed an indemnification of such person with respect to such person's status as an Owner, Occupant or otherwise.

2.2 Antennas. No antenna, aerial, satellite dish or cable for television or radio reception which is greater than 36" in diameter shall be erected or installed on or in any roof or any other portion of a Building, on any Lot, or on the unimproved portions of such properties, except as erected or installed by Declarant, the Association, or any individual Owner with written approval of the ACC, and, in each case, in compliance with Municipal ordinances.

2.3 Minimum / Maximum Home Size Requirements. Only one single family home not to exceed two stories in height may be constructed on each Lot. The following types of homes on Lots shall have the following minimum sizes:

HOME TYPE:	**MINIMUM SIZE:**
The Villas:	
One story	1,500 square feet
More than one story	1,800 square feet
The Residences:	
One story	1,800 square feet
More than one story	2,100 square feet
The Estates:	

One story	2,100 square feet
More than one story	2,500 square feet

For purposes hereof, "more than one story" includes homes referred to as one and a half story, two-story, split level or bi-level. The type of home and the number of square feet shall be determined on a uniform basis by the ACC and shall not include basement, attic, garage, porch or patio areas in the computation.

2.4 Garages / Driveway.

2.4.1 The Villas. Each residence within The Villas shall have a garage for not less than two cars attached to the residence containing a minimum of 400 square feet. All garage doors facing the street shall be decorative garage doors with either glass inserts or have architectural design such as carriage style or similar.

2.4.2 The Residences. Each home within The Residences shall have a garage for not less than two cars attached to the home containing a minimum of 440 square feet. Any architectural features, brick or stone placement on a two-car garage must be extended to a three-car garage if applicable. At least one garage front of a three-car garage must be staggered from the face of the other garage door(s). Garage doors for more than three cars shall not be permitted. All garage doors facing the street shall be decorative garage doors with either glass inserts or have architectural design such as carriage style or similar.

2.4.3 The Estates. Each home within The Estates shall have a garage for not less than two cars attached to the home containing a minimum of 500 square feet. Any architectural features, brick or stone placement on a two-car garage must be extended to a three-car garage if applicable. At least one garage front of a three-car garage must be staggered from the face of the other garage door(s). Garage doors for more than three cars shall not be permitted. All garage doors shall be decorative garage doors with either glass inserts or have architectural design such as carriage style or similar.

2.4.4 Driveways. All drives shall be asphalt or concrete or some other hard surface as approved by the ACC and shall be installed no later than twelve (12) months from occupancy. No permanent gravel drive will be permitted.

2.5 Certain Exterior Features. With respect to the construction of a Building on a Lot or other improvement to a Lot:

2.5.1 Exterior Siding. All homes shall be sided with cedar, cement board siding, stone, brick or stucco; vinyl will not be allowed. Fascia and soffit may be aluminum. Window and door wraps shall be at least four inch (4") nominal in width and used on all locations except on windows with shutters. If window grids are used on the front elevation they shall be continued around all elevations. All corners shall be six inch (6") trim boards. In addition, the following shall apply:

(a) The Villas. The Front elevation must contain an architecturally appealing stone or masonry element. Side elevations of homes shall require a minimum of

two (2) architectural elements for each ranch elevation and four (4) architectural elements for each two-story elevation. Architectural elements shall include any window, door, closed shutter (false window), fypon, horizontal trim, or break in elevation or foundation.

(b) The Residences. The front elevation in the Residences must have a minimum of twenty-five percent (25%) stone or brick. The stone or brick must terminate at an inside corner whenever possible. If that is not possible, it may terminate at a corner board that is at least (six inch) 6" in width. Side elevations of homes shall require a minimum of three (3) architectural elements for elevation for ranch homes and five (5) architectural elements for each two-story elevation. Architectural elements shall include any window, door, closed shutter (false window), fypon, horizontal trim, or break in elevation or foundation. No single-story building wall may extend more than thirty (30) feet in length without an offset of at least two (2) feet. No two-story building wall may extend more than twenty (20) feet in length without an offset of at least two (2) feet except as approved by the ACC.

(c) The Estates. The front elevation in the Estates must have a minimum of thirty percent (30%) stone or brick. The stone or brick must terminate at an inside corner. Side elevations of homes shall require a minimum of three (3) architectural elements for each ranch elevation and five (5) architectural elements for each two-story elevation. Architectural elements shall include any window, door, closed shutter (false window), fypon, horizontal trim, or break in elevation or foundation. Architectural features of the front elevation such as vertical siding, board and batten, shake siding, or gable details shall be continued on all elevations. No single-story building wall may extend more than thirty (30) feet in length without an offset of at least two (2) feet. No two-story building wall may extend more than twenty (20) feet in length without an offset of at least two (2) feet except as approved by the ACC.

(d) ACC Discretion. The ACC shall be acting reasonably if it disapproves the Drawings, or any portion thereof, for a home because such home would be similar in appearance to other homes in close proximity, as determined by the ACC.

2.5.2 Roof.

(a) The Villas. A residence within The Villas shall have a roof made of dimensional shingles, or better, with a minimum pitch ratio of 6:12 or such other pitch as is specifically approved by the ACC. "3-tab" shingles shall not be allowed.

(b) The Residences. A residence within The Residences shall have a roof made of dimensional shingles, or better, with a minimum pitch ratio of 6:12, 8:12 for front-facing gables, or such other pitch as is specifically approved by the ACC. "3-tab" shingles shall not be allowed.

(c) The Estates. A home within The Estates shall have a roof made of dimensional shingles, or better, with a minimum pitch ratio of 8:12 on a 2-story home or a minimum pitch ration of 10:12 on a ranch home or other pitch as specifically approved by the ACC. "3-tab" shingles shall not be allowed.

2.5.3 Fences. Fences of any kind shall not be permitted other than fences that required around an in-ground pool and are approved by the ACC.

2.5.4 Privacy Screening. All privacy screening of patios, yards, etc. is subject to review and approval by the ACC and is subject to applicable Municipal ordinances and building codes. Attractive wooden or composite screen panels or privacy barriers for patios may be approved by the ACC in writing, provided they do not exceed six (6) feet in height or create a complete enclosure. The ACC may, in its sole discretion, consider barrier location, materials, design and construction details in reviewing or approving any requests for patio screening. Attractive uses of trees or other plantings for the purpose of screening may be approved by the ACC in writing, provided that they are spaced a minimum of ten (10) feet apart and are installed in a staggered manner.

2.5.5 Grading. No soil shall be removed from any Lot nor may excess soil stored on any Lot (except for prompt use for backfilling, finish grading or landscaping) unless in either case contemplated by the approved Drawings. Even if so approved, the final grades (sometimes called a "finish grade" or "master grade") of a Lot must conform to grading plans approved by the Municipality. The ACC shall be acting reasonably if it requires that, on Lots with significant grades as determined by the ACC, portions of basement walls be exposed to allow for a more natural transition between homes. Any such exposed basement or foundation walls shall be covered with suitable material consistent with the overall architecture of the home.

2.5.6 Pools. Only in-ground pools may be installed on a Lot (above-ground pools are not allowed) and only with approval of the ACC, which approval shall not be construed as a review of conformance to the Municipal or other regulatory bodies' requirements. Pools shall be completely enclosed by a wall or fence of a minimum of four foot (4') elevation, with a self-closing or self-latching gate or door (at the top of such gate or door) with at least four feet (4') clearance between the fence and the pool. Owner is responsible to insure conformance to applicable Municipal and State of Wisconsin codes and ordinances to insure conformance to size, setbacks and any other requirements.

2.5.7 Cluster Box Units.

(a) CBUs. The term "***CBU***" shall mean the Cluster Box Unit installed along the roadway or in a Common Area serving the postal needs of each home. The Declarant shall direct the HOA to install CBUs in locations as approved by the USPS. If any CBU is damaged, destroyed, stolen, or any other adverse effected, the HOA shall be responsible, on behalf of the Lot Owners, to repair the defect in a timely manner and at the HOA's expense. The HOA shall issue all the keys for a box to a Lot Owner at the INITIAL occupancy of each home and the HOA. The Association will be responsible for providing a clear path free of snow or debris to the CBUs for the mail delivery carrier and residents. Upon the initial request from an Owner, the Association shall turn over all of the mailbox keys for that respective unit to the initial Owner in exchange for a signed agreement from the Owner. In the event keys are damaged, lost or not transferred to subsequent Owners or individual slot locks are in need of replacement; the current Owner shall have sole responsibility for coordinating obtaining keys or locks to their box in the CBU and payment of all costs incurred.

2.5.8 Exterior Illumination/Lighting.

(a) Front Elevation Lighting. All homes in The Villas, The Residences, and The Estates of the Subdivision are required to have outdoor lighting illuminating the front entrance to the home. Owners are required to install, operate, and maintain a minimum of two (2) electric lights on the street facing elevation of the home. If the garage is a side entry or courtyard style garage, at least one (1) electric light located on the street facing elevation and one (1) photo electric light located on the garage side elevation shall be alternatively accepted.

(b) Landscape Uplighting. No more than five (5) uplighting fixtures accenting landscaping features may be installed per each elevation of the home unless approved by the ACC.

2.5.9 Utilities. All utilities servicing the Lot shall be installed underground.

2.5.10 Alternative Energy. No solar collectors, wind turbines, or other exterior energy producing devices shall be erected or installed unless approved by the ACC.

2.5.11 Dog Kennels. Dog kennels shall not be allowed on any Lot even where one would otherwise be permitted by Municipal ordinance or code.

2.5.12 Play Equipment. If an Owner chooses to install a play set of any size, whether temporary or permanent, said playground equipment must be approved in advance by the ACC and conform to Municipal codes and ordinances. Play equipment shall be located a minimum of ten feet (10') away from any property lines.

2.5.13 Outbuildings. Storage sheds or outbuildings of any size, temporary or permanent, shall not be permitted under any circumstance.

2.6 Grading and Landscaping.

2.6.1 Master Grading Plan.

(a) Declarant has established a master surface drainage plan consistent with the master grading plan on file with the Municipality (the "***Master Grading Plan***") designating the manner in which each Lot shall drain in relation to all other Lots. Compliance of all grading and construction work to the Master Grading Plan is important to the effective drainage of all Lots and affects the value of all Lots. Within sixty (60) days after substantial completion of a dwelling on any Lot, the Owner shall grade the Lot to conform to the Master Grading Plan. Each Owner will take such action as is reasonably necessary to maintain the grading and landscaping of the Owner's Lot in accordance with the Master Grading Plan, and shall refrain from taking actions which would cause the grading or landscaping to not conform to the Master Grading Plan without Municipal and ACC approval. Declarant and the Association shall each have the right to enter upon any Lot at any time for the purpose of inspection, maintenance, correction of any drainage condition, and the Owner shall be responsible for the cost thereof. Despite Declarant's efforts to prepare a Master Grading Plan which will achieve the effective and efficient drainage of

storm water from and within the Subdivision, Declarant does not warrant or represent that the Master Grading Plan will achieve any particular effect. Building envelopes are shown on the Plat. Any deviations to the Master Grading Plan shall require review and approval by the Municipal Engineer prior to the issuance of the building permit.

(b) No Owner shall or will at any time alter the grade of any Lot from that which is naturally occurring on that Lot at the time the site development improvements have been completed by the Declarant unless and until the Owner shall first obtain the written approval of the Municipal Engineer for such grade alteration. In order to obtain this approval, it shall first be necessary for the Owner, at the Owner's expense, to have prepared a grading plan which shows in detail the area to be re-graded, the existing and proposed topography, analyzes the effects of site drainage, states that the effects on site drainage will not be in violation of law as to alteration of natural drainage courses, and is a plan which does not unreasonably affect an adjacent property owner with respect to drainage or their viewing of unreasonable slope treatment. The Municipal Engineer's approval, if granted shall not relieve the Owner from the ultimate responsibility for the design, performance, and function of the grade alteration and/or drainage condition, and the Owner by requesting the alteration, and/or altering the grade, thereby agrees to indemnify and hold harmless the Municipality and its agents, employees and independent contractors regarding the same. The Declarant and/or the Municipality and/or their agents, employees or independent contractors shall have the right to enter upon any Lot, at any time, for the purpose of inspection, maintenance, correction of any drainage condition, and the property owner is responsible for the cost of the same.

2.6.2 Landscaping.

(a) The Villas. Each Lot with a home in The Villas must plant and maintain a minimum of one (1) – 2.5" caliper, single-stem deciduous tree and one (1) – 2" caliper, single-stem ornamental tree located in the front yard. Additionally, there must be a minimum of twelve (10) foundation plantings and mulched bed along the front foundation wall.

(b) The Residences. Each Lot with a home in The Residences must plant and maintain a minimum of two (2) – 2.5" caliper, single-stem deciduous trees and one (1) – 2" caliper, single-stem ornamental tree located in the front yard. Additionally, there must be a minimum of twelve (12) foundation plantings and mulched bed along the front foundation wall.

(c) The Estates. Each Lot with a home in The Estates must plant and maintain a minimum of two (2) – 2.5" caliper, single-stem deciduous trees and one (1) – 2" caliper, single-stem ornamental tree located in the front yard. Additionally, there must be a minimum of twelve (14) foundation plantings and mulched bed along the front foundation wall.

(d) Vegetative Cover. Each individual Lot Owner shall be responsible for installing and maintaining vegetative cover (a lawn or landscaping) on all exposed soil on their Lot to prevent erosion of the soil into unwanted locations. This vegetative cover must be installed within sixty (60) days of obtaining occupancy of the home or, in the case

of winter occupancy as outlined in item (e) below. Note that other materials are allowable around the foundation and paved surfaces including, but not limited to gravel, mulch, brick or any other material that will reduce erosion and permanently stabilize the disturbed areas of soil. If the Owner of any Lot, after reasonable written notice from the Association, fails or refuses to install vegetative cover as described herein, or maintain it as required above, the Association, through its duly authorized agents or employees, shall have the right to enter upon said Lot at reasonable hours to perform said landscaping and/or maintenance. The costs of the materials and labor to perform such landscaping and/or maintenance shall be assessed against said Lot in accordance with Municipal codes or ordinances, or the Wisconsin State Statutes. This restriction for vegetative cover does not apply during the winter months when growing conditions will not allow the establishment of vegetation cover. In such an event the Owner shall be required to establish vegetative cover within sixty (60) days of proper growing conditions. The growing season for this area is anticipated to be from mid-April to mid-October.

2.6.3 Irrigation. Irrigation systems for lawns and planting beds, if installed, shall utilize irrigation controllers and components that conform to the Environmental Protection Agency's "WaterSense" criteria. If such criteria are no longer available, the ACC may substitute a different standard. Controllers shall be equipped with a precision soil sensor and rain sensor, as minimum components. Controllers and equipment shall be installed, programmed and maintained according to manufacturer's recommendations. If the model of controller specified above is, in the opinion of the ACC, no longer readily available or available at reasonable cost, the ACC may choose a different controller from time to time as the standard. The ACC may also permit use of other products from other manufacturers, with similar features, as "or equal" products.

2.6.4 Easements. Plantings in the public and private easements may not be permitted by terms of the easement and should be avoided. Plantings within easements will be at-risk for removal by the Municipality and may be subject to damage or removal for maintenance and/or repair operations.

2.7 Municipal Codes and Ordinances. All items in this Article 2 shall be subject to Municipal codes and ordinances, as may be modified from time to time.

ARTICLE 3. ASSOCIATION OF OWNERS

3.1 Administration. Declarant shall establish the Association, which shall be incorporated as a Wisconsin nonstock corporation, and shall adopt Bylaws for its governance and administration of the Common Areas and Common Improvements. The Board may, but need not, from time to time adopt and amend Rules that are binding on all Owners and Occupants. The Board shall administer and enforce the Common Areas, the provisions of this Declaration and the Bylaws, the Rules, and all other uses of and restrictions on the Property such as easements. Until the establishment of the Association, all powers of the Association shall be exercised by Declarant.

3.2 Membership and Voting. Effective as of the date of purchase or creation of a Lot, each Owner shall be a member of the Association. In the Association, the Owner(s) of each Lot shall be entitled to one vote for each Lot owned. If one or more Lots change their status to some other form of ownership, the votes appurtenant to each original Lot shall not be changed. No

member shall be permitted to vote if such member is more than thirty (30) days delinquent in the payment of any amount due to the Association under Article 4 of this Declaration.

3.3 Control of Association. Declarant shall have the right to appoint and remove Directors of the Association and to exercise any and all powers and responsibilities assigned to the Association, the Board, or its officers, by the Articles of Incorporation, Bylaws, this Declaration or the Wisconsin Nonstock Corporation Law (as amended from time to time), which rights shall expire upon the earlier of: (a) thirty (30) days from Declarant's conveyance of the final Lot, including any Lots which may be platted within the Expansion Area as provided in this Declaration, to an Owner who has been granted an occupancy permit and intends to reside on the Lot; (b) fifteen (15) years from the date of this Declaration; or (c) Declarant's election to waive its rights to control the Association. Upon Declarant's surrender of its rights to control the Association as provided above, the Directors shall be elected by the majority vote of the Owners within the Subdivision. For the avoidance of doubt, for purposes of this Section a "bulk" or multi-Lot conveyance to a party who is not intending to occupy the property conveyed shall not be considered a conveyance for purposes of (a) above.

3.4 Management. The Association may employ a professional management agent or company to assist in carrying out its duties regarding the Common Areas, the Common Improvements, and this Declaration, with such experience and qualifications and on such terms and conditions as are acceptable to the Board. Any such agreement must be terminable by the Board, without cause, upon 90-day notice without payment of any penalty.

ARTICLE 4. ASSESSMENTS

4.1 Budget and Assessments.

4.1.1 Deposit. In addition to the Lot purchase price, each Owner will deposit an initial fee with the Association as an initial assessment; amount as stated in the purchase documents. The deposit must be made at the time of closing of the initial purchase of the Lot by an Owner intending to occupy a home on such Lot. Two Hundred and Fifty Dollars ($250) of this initial fee shall be forwarded to the Master Association upon receipt.

4.1.2 Assessments. The Association shall have the power to levy an annual assessment against each Lot for the purpose of defraying, in whole or in part, the costs incurred by the Association, including costs to operate the Amenity Area improvements that are unique to the single family development, the cost of any assessments levied from the Master Association, and to fund capital accounts. Such annual assessment shall be levied by the Association as of March 1st of each year, and a statement for such amount shall be mailed to the owner of each Lot as of such date and shall be payable on or before March 31st of each year. The Association may from time to time permit the payment of the annual assessment on a monthly or other basis, but the entire assessment remains due.

4.1.3 Budget. The Association shall annually adopt a budget of common expenses and levy assessments on the Lots based on such budget as provided above, allocating such assessments equally to each Lot, subject to the limitations herein. The budget shall include amounts representing assessments that are bad debts, and a reserve for contingencies and replacements for the Amenity Area as provided in Section 7.5, and may include a replacement

reserve for any other purpose determined by the Board in its reasonable discretion, which in each case shall constitute part of the general assessments. Until a new budget is adopted, the prior year's budget shall remain in effect.

4.1.4 Collection. The Association may delegate to a third party manager or collection agent the authority to collect any assessments.

4.1.5 Special Assessments; Fines. The Association may also levy: (a) special assessments on all Lots for any purpose for which a general assessment or special assessment may be levied; or (b) fines on particular Owners for the purpose of collecting any amounts due the Association or enforcing compliance by such Owners with any provision of this Declaration, the Bylaws or any Rules. The Board may adopt a Rule to impose uniform charges for services which the Association provides related to transfer of Lots, review of proposals under Article 2, and the like. The Board may adopt an initial budget showing the anticipated amounts necessary to cover common expenses.

4.2 Installments; Late Payments. General assessments shall be levied on an annual basis, but shall be due and payable on March 31st, or as determined by the Board from time to time and as set forth herein. Special assessments shall be due and payable at such time and in such manner as the Board may determine. If an assessment is not paid when due then such assessment shall become delinquent and shall accrue interest at the rate of twelve percent (12%) per annum until the assessment is paid in full. Any assessment or installment of an assessment not paid within ten (10) days of its due date may also be subject to a late charge and/or interest as set forth in the Bylaws and/or in the Rules.

4.3 Enforcement; Liens. All general and special assessments which are not paid when due shall constitute a lien on the Lot; and shall be collectible and enforceable by the Association by suit against the Lot Owner, by foreclosure of the lien, and/or in any other manner or method provided under this Declaration or laws of the State of Wisconsin. The lien granted hereunder shall also cover and include all interest accruing on delinquent assessments, plus costs, expenses and attorneys' fees for collection. The Association shall have the exclusive right and power to collect or enforce collection of all general and special assessments and shall further have the exclusive right to bring any and all actions and proceedings for the collection thereof and/or the enforcement of liens arising therefrom. The Association may bring an action at law against any Lot Owner personally to collect such assessments and/or to foreclose the lien for such assessments against the Lot (in the same manner and method as an action to foreclose a real estate mortgage). The Association may purchase a property upon foreclosure of its lien. Under Section 3.2 an Owner delinquent in payments may in some cases not be permitted to vote on matters before the membership of the Association.

4.4 Association Statements. Within five (5) business days of written request from an Owner or a Mortgagee, the Association shall provide a letter stating the existence and amount of outstanding general or special assessments against the Owner's property, if any. Notwithstanding anything to the contrary in the preceding sentence, all property conveyed by Declarant shall be deemed conveyed free from outstanding general, special or working capital assessments and no such letter shall be required or given as to such property.

4.5 Common Expenses and Surpluses. Common expenses and surpluses shall be allocated in the same manner as general assessments are allocated. All common surpluses for each fiscal year shall be retained for common expenses for the next succeeding fiscal year.

4.6 No Fees or Assessments in Event of Tax Forfeiture. Neither the County nor the Municipality shall be liable for any fees or special assessments in the event that the County or the Municipality become the owner of one or more Lots by reason of tax delinquency.

ARTICLE 5. MAINTENANCE AND ALTERATIONS

5.1 Owner Responsibility. Each Owner or Occupant shall reimburse the Association for the cost of the Association's repair or replacement of any portion of the Common Areas or Common Improvements (including the Amenity Area, if any) damaged through the fault or negligence of such Owner/Occupant or such Owner's/Occupant's family, guests, invitees or tenants. Each Owner shall, at the Owner's cost, even if no home has been constructed by such Owner, maintain the yard, including the cutting of grass and snow removal from driveways and, if any, sidewalks, in an orderly and neat manner and shall maintain all structures on the Lot in good repair and condition.

5.2 Association Responsibility. The Association shall maintain in good condition and repair, including snow removal, replace and operate all of the Common Areas and Common Improvements, including easements, signs, landscaping, trees and plantings in the Common Areas and trimming of such landscaping. The Association may, in its discretion, install additional Common Improvements in the Common Areas. Each Owner shall be responsible for its share of the cost for such activities. The Association shall release and indemnify the Municipality for any maintenance responsibilities with respect to same.

5.3 Municipal Responsibility. The Municipality shall have no responsibility for maintenance or alteration under this Article 5. In the event the Association does not properly landscape or maintain any Common Area, or properly maintain any signage, the Municipality may send written notice to the Association indicating that the Municipality has determined that the Common Areas and/or signage are not being properly landscaped and/or maintained, and further indicating that the Municipality will perform such landscaping and/or maintenance if not properly done by the Association. The above-referenced notice shall give the Association a minimum of seven (7) days to correct the problem. If the Common Area and/or sign is not properly landscaped and/or maintained within the time granted by the above-referenced notice, the Municipality shall have the authority to landscape and/or maintain any such Common Area and/or sign referred to in said notice and shall have the right to charge the Owners on a pro rata basis for any costs incurred by the Municipality as a result of said landscaping and/or maintenance. Said costs shall be assessed as special charges pursuant to Section 66.0627, Wis. Stats. If such charges are not paid by any Owner within the period fixed by the Municipality, charges shall become a lien upon the Owner's Lot as provided in Section 66.0627, Wis. Stats., and shall be extended upon the tax rolls as a delinquent tax against the Owner's Lot as provided in Section 66.0627, Wis. Stats.

5.4 Alterations and Maintenance. Landscaping, berms, grading, drainage pathways, Common Improvements or other improvements in the Amenity Area or Common Areas may not be removed or substantially altered without written approval by the Association, Municipal engineer and the Municipal plan commission, as may be required. Maintenance and minor

alterations of these improvements are allowed, such as the removal/repair of damage structures, pruning of trees, replacement of ground cover, and repair or replacement of the fencing and other structures. Owners are encouraged to remove trash and debris and should report any unauthorized use within the Common Areas or Common Improvements to the Association. Declarant and or the Municipality are able to provide a copy of the plans for the Common Area upon request by the Association.

ARTICLE 6. RESTRICTIONS ON USE AND OCCUPANCY

6.1 Permitted Uses.

6.1.1 Single Family Residential. Each Lot shall be occupied and used only for single family residential purposes, except as provided in Section 6.1.2. The term "***residential purposes***" includes only those activities necessary for or normally associated with the use and enjoyment of a home site as a place of residence and limited recreation. No garage or other mobile or accessory structure shall be used for temporary or permanent living or sleeping for family or guests without prior approval of the ACC.

6.1.2 Home Business. A home may be used for a home-business if it obtains the prior written approval of the ACC. A home-business shall only be approved if the home-business has no (zero) employees other than immediate family members, and the home-business has no outside client, vendor or customer sales occurring at the home. No trade or business shall be carried on anywhere in the Subdivision, except for (1) the incidental use of a Lot for personal business conducted by mail and telecommunications which does not burden the use of the Subdivision by frequent visits by business service providers or customers, subject to any Rules relating to such burdens, or (2) the sale of Lots, subject to the other provisions hereof and any Rules related thereto, or (3) the establishment of offices by Declarant or its agents for sales of Lots or by the Association for conducting its affairs. These uses may require specific approval by the Municipality and must be in compliance with all Municipal ordinances and regulations or receive a temporary use permit as authorized by the Municipality. Approval of a use by the ACC does not constitute approval by the Municipality or certification that the use complies with Municipal ordinances and regulations.

6.1.3 Amenity Area. The Amenity Area shall be used for the purpose of miscellaneous recreational amenities (which may or may not include, without limitation, a swimming pool, playground, sport court, ice skating rink, community gardens, and parking for same) as decided by the Association, in its sole discretion.

6.2 Pets. Subject to Municipal Ordinances, and applicable federal or state statutes, rules, regulations, or orders to the extent they supersede the restrictions of this Declaration, no animals, livestock or poultry shall be raised, bred or kept on any Lot, except that Pets shall be permitted providing they are not raised, bred and/or kept for commercial purposes and service animals and emotional support animals shall be permitted to the extent permitted by applicable municipal ordinances and applicable federal or state statutes, rules, regulations, or orders to the extent they supersede the restrictions of this Declaration. An Owner or Occupant may keep no more than three (3) Pets per Lot on the conditions that:

(a) the Pet is not permitted on any of the Common Areas while unattended or unleashed; and

(b) the Pet is licensed by the Municipality or appropriate licensing authority, if required under applicable ordinances; and

(c) no reptiles or un-caged birds shall be permitted; and

(d) the Pet must immediately and permanently be removed from the Property if, in the sole judgment of the Board or Municipality, the Pet is or becomes offensive, a nuisance or harmful in any way to the Property or any Owner or Occupant, or otherwise violates the terms of this Section or any Rules adopted relating to Pets; and

(e) the Pet is subject to such Rules as the Association may adopt from time to time on the subject; and

(f) possession of Pets is a privilege which may be revoked and shall not be considered a property right.

6.3 Vehicles. No outdoor parking of vehicles shall be permitted on the Lots for more than twenty-four (24) consecutive hours, without the express prior consent of the Board. No person shall occupy, park or otherwise use a vehicle so as to block access to a Lot. Storage or parking of trailers, campers, camping trucks, boats or other marine craft, horse or boat trailers, motorcycles, mopeds, motorized bicycles, vehicles licensed as recreational vehicles or commercial vehicles, snowmobiles, all-terrain vehicles, inoperative or unlicensed vehicles or the like shall not be permitted on a Lot, except (i) in a garage, (ii) in the case of recreational vehicles, commercial vehicles, campers, trailers, and boats, outside of a garage for no longer than one twenty-four (24) hours in a one week period; or (iii) outside parking on a case-by-case basis as approved by the ACC.

6.4 Waste. Accumulations of waste, litter, excess or unused building materials or trash other than in appropriate receptacles is prohibited. Garbage containers stored outside during initial construction or remodeling shall be situated only in locations designated by the Association. Lots shall be kept free of debris during construction of improvements thereon by maintenance of a dumpster on-site. The refuse and garbage receptacles for each occupied home shall be stored in the home or garage, except for a period of twelve (12) hours prior to and following the scheduled garbage pickup. All incinerators and other equipment for the storage or disposal of such material shall be kept in a clean and sanitary condition.

6.5 Temporary Structures. No structure, trailer, shack or barn, temporary or otherwise, shall be placed or maintained on any portion of a Lot or Common Area without written approval of the ACC, except for construction trailers maintained by Declarant and its successors and assigns, or the Association.

6.6 Quiet Enjoyment. Each Owner shall have the right to use its property in accordance with this Declaration and applicable law, free from unreasonable interference from any other Owner, Occupant and other invitee. No person shall cause or permit the Common Areas to be used so as to deny any Owner or Occupant the full use of the Common Areas except as permitted

by the Association under Article 3 or in accordance with rules established by the Association with respect to the Amenity Area.

6.7 Noxious Activity. No use or practice shall be allowed in the Subdivision or the Common Areas which is immoral, improper or offensive in the opinion of the Board or which is in violation of the Documents. By way of example and not limitation, offensive activity shall include excessive amplification of musical instruments and/or audio or audio visual equipment.

6.8 Patios and Balconies. Patios, decks and balconies of Buildings on Lots shall be kept in good condition and maintained in a quality similar to that of any Building on the Lot.

6.9 Signs. No Owner or Occupant may erect, post or display posters, Signs or advertising material on the Common Areas or at locations within a Building which are visible from the public streets or Common Areas without the prior written consent of the Board, except (a) Declarant may do so without such approval, and (b) an Owner may erect or post a temporary sign of customary and reasonable dimension relating to the sale of a Lot. The Board may at its discretion, in particular circumstances or in general, delegate its right to consent under this Section to the ACC described in Article 2. Where Board consent is sought and obtained, the permitted Signs will be erected and maintained in accordance with all ordinances, rules, regulations and conditions applicable thereto. "***Signs***" as used herein shall be construed and interpreted in the broadest possible sense, and shall include any placard, posters or other such devices as may be affixed to the interior of any exterior windows so as to be visible from the exterior of the Building. All Signs placed within easements or the public right-of-ways shall also require Municipal approval and/or permits.

6.10 Compliance with Laws; Environmental Matters. Each Owner and Occupant shall comply with all applicable governmental or Association statutes, ordinances, regulations or rules, including but not limited to, Municipal ordinances. Such applicable laws include, but are not limited to, those relating to the storage, transport and release to, from, on or in such Lot of any substance or compound governed by any one or more State of Wisconsin Statutes; Comprehensive Environmental Response, Compensation and Liability Act ("***CERCLA***"); Toxic Substances Control Act ("***TOCSA***"); Resource Conservation and Recovery Act ("***RCRA***"); Municipal ordinances; and similar laws relating to the storage, transport or release of substances, compounds or recyclable materials, all as in effect from time to time.

6.11 Obstructions. Unless installed by the Declarant or the Association, no playground equipment, bicycle racks or other equipment or material may be placed on the Common Areas.

6.12 No Further Divisions. No Lot may be further subdivided without the approval of the Municipality, the Association and/or the ACC.

ARTICLE 7. SPECIAL FEATURES

7.1 Storm Water Facilities. The Storm Water Facilities shall be fractionally owned by the Lot Owners and managed by the Association. The Association shall have the ability to impose assessments for the inspection, maintenance, and repair of the Storm Water Facilities. The Common Areas include storm sewer and surface water drainage systems. The Storm Water Facilities are located in commonly owned outlots as shown on the Final Plat and are Common

Areas maintained by the Association in accordance with the Storm Water Agreement and shall be used solely for drainage and storm water purposes and not for recreational purposes. The Association has no duty to ensure the safety of persons using the drainage areas, or to warn of dangers concerning them. Neither the Declarant nor the Association is responsible for the safety of any drainage area for use by humans or Pets, and neither represents nor warrants that any drainage area is safe for any such use.

7.2 Easements. As provided on the Plat, there are easements located on various Lots for storm water utilities, overland storm water flow, underground utilities, and other items. These easements allow access by the Municipality, Association, ACC or other entity to maintain, repair and access the Lots as may be required from time to time.

7.3 Parade of Homes. Declarant discloses that Declarant may arrange for the Subdivision to be included in the Metropolitan Builders Association (the "***MBA***") Parade of Homes or similarly titled event in which members of the public are invited to inspect a number of Lots improved with homes constructed by one or more contractors. Such events may result in temporary periods of significant construction activity, traffic slowdowns and large crowds, and shall continue for a period of several weeks. A Lot Owner is deemed to acknowledge the possibility of said event and is deemed to have waived any objection to the issuance of any Municipal permits required for such event. Declarant is not, however, required to include the Subdivision in any such event, and may base its decision on the Declarant's individual needs, if any. While the Parade of Homes is in progress, all construction activities must stop by 2:00 p.m. on weekdays and 10:00 a.m. on weekends and Labor Day. All debris must be properly disposed of and the streets in front of the Lots must be swept clean of mud and stones. Homes which are not included for inspection as a part of the Parade of Homes must be vacated by the Owners during the hours that the Parade of Homes is open to the public. Unbuilt Lots may be used for Parade of Homes parking as determined by Declarant. No home or Lot shall display any Signs indicating the builders, subcontractors, or any property for sale during the duration of the Parade of Homes, except those Signs allowed in accordance with the MBA's rules and regulations. If a Lot Owner fails to participate in the Parade of Homes after agreeing to do so, the Lot Owner shall reimburse the Declarant for any discounts, including but not limited to, Lot price reductions, mailboxes, lanterns, and other fees paid by the Declarant for the Parade of Homes Lot Owner or builder, that the Lot Owner received by being a participant to the Parade of Homes.

7.4 Amenity Area. The Declarant or, after the period of Declarant control has ended, the Association, may, in its sole discretion, construct various recreational amenities (which may include, without limitation, a swimming pool, playground, sport court, ice skating rink, fire pit area, community gardens, and parking for same) in certain Common Areas determined by Declarant or the Association, as applicable. Each Owner shall have the right to use the Amenity Area as with any other Common Area, subject to the Rules. Nothing herein is a representation or warranty that any particular amenity will ever be installed or constructed, or as to the quality of any amenity which is installed or constructed. In addition to the Amenity Area, the Declarant or Association (under the conditions above) may install amenities and Common Improvements in any other Common Area.

7.4.1 Rules and Regulations. The Association shall, through its Board of Directors, establish all rules and regulations regarding the use of the Amenity Area, including without limitation rules related to hours of use and permitted and prohibited activities and conduct.

7.4.2 Maintenance, Repair, and Replacement. Subject to other applicable provisions of this Declaration, the Association shall maintain, repair and replace the Amenity Area to the extent determined necessary or advisable by the Association and as required by law.

7.4.3 Insurance. The Association shall insure the Amenity Area against direct loss or damage occasioned by fire, extended coverage perils and other hazards in amounts and with insurers reasonably chosen by the Association. Such insurance shall be issued in an amount without co-insurance at least equal to the full value any Building(s) and other improvements erected thereon. The Association shall also maintain general public liability insurance and such other insurance with coverages, in amounts and with insurers that the Association reasonably requires from time to time.

7.4.4 Annual Budget. The Association shall include in its annual budget an estimate of the total amount necessary to pay the costs for the following calendar year of operating, maintaining, repairing and replacing the Amenity Area. Expenses shall include without limitation all costs of employees, payroll taxes, materials, parking costs, insurance, services, management fees, supplies, maintenance, repair, landscaping, fuel and power, together with a reasonable amount considered by the Board to be necessary for a reserve for contingencies and replacements.

ARTICLE 8. INSURANCE

8.1 Association Insurance. The Association shall obtain and maintain comprehensive general public liability insurance for occurrences on the Common Areas and with respect to Common Improvements not in the Common Areas, all-risk casualty insurance coverage on all Common Improvements, and such other policies and/or coverage as the Board deems necessary or advisable, such as fidelity insurance for Association officers handling fund of the Association.

8.2 Coverage of Association Insurance. The casualty insurance coverage shall be in an amount equal to the maximum insurable replacement value, with an "agreed amount" and a "replacement cost" endorsement, without deduction or allowance for depreciation. This coverage amount shall be annually reviewed and shall insure against loss or damage by fire and other hazards as commonly covered by a standard extended coverage endorsement and such other hazards as customarily covered with respect to buildings similar in construction, location and use. Commercial general liability coverage shall be in such amounts as the Board determines annually, but not less than $1,000,000 per occurrence.

8.3 Proceeds. Association Insurance proceeds for casualty loss shall be for the benefit of the Association in order to finance construction of damaged Common Areas or Common Improvements. Liability coverage and other insurance proceeds shall be applied as the Association directs.

8.4 Cost. All premiums for Association Insurance and other insurance obtained by the Association shall be a general assessment.

8.5 Waiver. The Association and, by acceptance of a conveyance to a Lot or the use thereof, or any portion thereof or interest therein, each Owner or Occupant acting both for themselves and for their respective insurers, waive any claim it or they may have against the other for any loss insured under any policy obtained by either to the extent of insurance proceeds actually

received, however the loss is caused, including such losses as may be due to the negligence of the other party, its agents or employees. All policies of insurance shall contain a provision that they are not invalidated by the foregoing waiver, but such waiver shall cease to be effective if the existence thereof precludes the Association from obtaining any policy of insurance at a reasonable and customary rate.

8.6 Acts Affecting Insurance. No Owner or Occupant shall commit or permit any violation of covenants or agreements contained in any of the Association Insurance, or do or permit anything to be done, or keep or permit anything to be kept, or permit any condition to exist, which might (a) result in termination of any such policies, (b) adversely affect the right of recovery thereunder, (c) result in reputable insurance companies refusing to provide such insurance, or (d) result in an increase in the insurance rate or premium over the premium which would have been charged in the absence of such violation or condition, unless, in the case of such increase, the Owner or Occupant responsible for such increase shall pay the same. If the rate of premium payable with respect to the Association Insurance shall be increased by reason of (1) the size, design or composition of a Building, or (2) anything done or kept in a property subject to this Declaration, or (3) the failure of an Owner or Occupant to comply with Association Insurance requirements, or (4) the failure of any such Owner or Occupant to comply with this Declaration or the Bylaws, then the particular Owner or Occupant shall reimburse the Association for the resulting additional premiums. The Association reimbursement right is without prejudice to any other Association remedy, and may be enforced by special assessment against the particular property involved.

8.7 Exclusions from Coverage. Association Insurance coverage shall exclude (a) coverage on any home or personal property located within or pertaining to the exclusive use of an Owner except to the extent included as a standard coverage in the policy of Association Insurance; and (b) liability coverage on an Owner or Occupant, its guests, invitee, employees or tenants, arising out of any occurrences within a Lot and/or relating in any way to an Owner's or Occupant's personal property. It is the sole responsibility of each Owner or Occupant to obtain such insurance coverage as are excluded from Association Insurance.

ARTICLE 9. AMENDMENT OF DECLARATION

9.1 General. Except as otherwise provided herein, this Declaration may be amended only by the written consent of at least sixty-seven percent (67%) of the total votes of the Association then entitled to vote. Regardless of the manner of adoption, no amendment shall adversely affect a special right or easement reserved to Declarant under this Declaration, or the rights of Mortgagees under Article 11, without the express written consent of Declarant or Mortgagee, as applicable. Notwithstanding the foregoing, Declarant reserves the right to unilaterally amend the Declaration until one (1) year after one hundred percent (100%) of the then existing Lots (inclusive of any Lots added to the Expansion Area by Declarant in its discretion or vacant land in the Expansion Area that is not developed) have been sold to an Owner intending to reside thereon and occupancy permits have been granted for each Lot. During such period, Declarant may also enter into other agreements on behalf of Association or Lot Owners for purposes of easements and/or other items necessary for the orderly operation and maintenance of the Subdivision and/or Association, provided however, that any amendments to the restrictions where the Municipality is involved may require the approval by the Municipality.

9.2 Procedures. Except with respect to an amendment by Declarant, amendments to this Declaration shall be prepared and executed by the president of the Association, and municipality as may be required, and shall become effective when recorded in the office of the Register of Deeds. No action to challenge the validity of an amendment shall be commenced more than one (1) year after the amendment is recorded, except for failure to obtain the approval of the Municipality as required by this Section.

ARTICLE 10. RIGHTS OF MORTGAGE HOLDERS

10.1 Notice. Any Mortgage holder, insurer or guarantor of a Mortgage encumbering a Lot that submits a written request to the Association, identifying the name and address of such holder, insurer or guarantor and the Lot involved, will be entitled to timely written notice of:

(a) Any thirty (30) day delinquency in the payment of assessments owed by the Owner of the Lot on which it holds a Mortgage or any breach of the provisions of any of the Documents which is not cured by such Owner within thirty (30) days of such Owner's receipt of notice of such breach;

(b) A lapse, cancellation or material modification of any Association Insurance; and

(c) Any proposed action that requires the consent of a Mortgage holder.

10.2 Mortgagee Acquisition of Lot. A Mortgagee acquiring title to a Lot pursuant to remedies provided in its Mortgage, or by a deed in lieu of foreclosure following an Owner's default under the Mortgage, shall not be liable for such Lot's unpaid assessments under this Declaration accruing prior to the Mortgagee's acquisition of title to such Lot (except to the extent unpaid assessments are included in subsequent budgets generally), but shall ensure that any such prior delinquent assessments are paid upon transfer of the Lot to a third party.

ARTICLE 11. RIGHTS OF DECLARANT

11.1 Reserved Rights. Prior to the sale of all Lots by Declarant and occupancy permits granted for all Lots, Declarant:

(a) may use the Common Areas or Amenity Area, and any unsold Lots in any manner as may facilitate the sale of Lots including, but not limited to, maintaining a sales and/or rental offices, model homes and signs and/or showing the Lots. Declarant may from time to time also delegate such rights (on a non-exclusive basis and subject to such conditions as Declarant may impose) to persons desiring to construct Buildings on particular Lots as model homes. In delegating such rights to other persons, Declarant's delegates shall not have the right, without Declarant's express written consent, to locate a general sales office operation in any such model home, although use of a model home to facilitate sales of Lots or sales of Buildings on Lots may be permitted for a period not to exceed forty-eight (48) months from the date of issuance of the certificate of occupancy therefor; provided, however, that once a model home is used as a home for an Occupant, it may not thereafter be used as a "model home".

(b) shall have the right to (1) grant easements upon, over, through and across the Lots (limited to the ten (10) feet area adjacent to each Lot line), which rights shall expire one (1) year after conveyance of a Lot by Declarant. Additionally, the right to grant easements upon, over, through and across the Common Areas as may be required in Declarant's sole opinion for furnishing any kind of utility services, maintenance and replacement thereof, drainage, grading, communications or public purposes including, which easements may be granted to itself or its nominee and as may be necessary for excavation and construction of any Buildings or for ingress and egress and maintenance and replacement thereof, to, from, and within, the Property and other real property adjacent to it.

(c) shall have the right to veto any proposed amendment to this Declaration for any reason or no reason, in which case it shall not be deemed approved or effective.

For purposes of this Section, a "bulk" or multi-Lot conveyance to a party who is not intending to occupy the property conveyed shall not be considered a "sale" for purposes of this Section.

11.2 Addition to or Subtraction from the Subdivision. Declarant reserves the right, at any time during the term of this Declaration and in its sole discretion, from time to time to subject portions of the Expansion Area to this Declaration in accordance with this Section. Each time Declarant subjects a portion of the Expansion Area to this Declaration it is known as an "Expansion".

11.2.1 Expansion. Declarant reserves the right, at any time, and from time to time, during the term of this Declaration and in its sole discretion, to subject additional real estate outside the Subdivision to this Declaration by recording a document imposing on such real estate the provisions of this Declaration (as amended from time to time). The additional real estate shall be located in the Municipality and shall be adjacent to the Subdivision (ignoring streets, railroads and navigable waters which may separate the additional real estate from the Subdivision). The additional real estate will be subject to the provisions of this Article 12 as though it were a part of the original Subdivision.

11.2.2 Procedure for Expansion. Declarant shall add to the Subdivision by recording with the Register of Deeds one or more amendments to this Declaration setting forth the legal description of the area so affected. An amendment creating an Expansion need be executed only by the Declarant and does not require consent from or notice to any other person.

11.2.3 Contents of Expansion Amendment. An Expansion amendment will (a) state the legal description of the land being subjected to this Declaration; (b) set forth such other limitations on such future Lots as Declarant may desire not inconsistent with this Declaration; and (c) set forth such other information as is reasonable to facilitate the Expansion and the integration of the area into the Association. All other provisions of the Declaration shall apply to the Lots or Outlots included in any Expansion.

11.2.4 Procedure for Subtraction of Land. For so long as the Declarant is in control of the Association, the Declarant may also, in its sole discretion, by recorded document, remove

the Expansion Land or any Lots not yet sold, from the effect of this Declaration and thereby reduce the extent of the Subdivision, without the consent of the Lot Owners within the Subdivision, subject to the amendment procedures of Section 9.1.

11.2.5 Modification of Budget and Assessments. Upon each such Expansion, the Association will amend the annual Budget and annual assessments as appropriate to account for the effects of any Expansion or subtraction. Any assessments prior to the addition or subtraction of the area affected by the Expansion or subtraction will be pro-rated and adjusted by the Association accordingly. Each Owner in the Expansion Area shall have the same rights and obligations as if such Owner was an Owner under the initial Declaration. All Owners acknowledge that the proportionate share of expenses and the corresponding assessments will be revised to reflect the presence of additional Lots. Each Owner also acknowledges that assessments could increase or decrease based on the facts and circumstances in effect at the time of such addition or subtraction.

11.2.6 Other Lands. Declarant also reserves the right, at any time, and from time to time, during the term of this Declaration and in its sole discretion, to subject additional real estate outside the Subdivision to this Declaration by recording a document imposing on such real estate the provisions of this Declaration (as amended from time to time), subject to the amendment procedures of Section 9.1. The additional real estate shall be located in the Municipality and shall be adjacent to the Subdivision (ignoring streets, railroads and navigable waters which may separate the additional real estate from the Subdivision). The additional real estate will be subject to the provisions of this Article 11 as though it were a part of the original Expansion Area.

11.2.7 Effective Date of Expansion. The Subdivision shall be deemed expanded when an amendment to this Declaration, executed by Declarant, is recorded with the Register's Office.

11.2.8 Effect of Expansion on Common Areas. To the extent that Owners have a tenancy in common interest in Common Areas prior to an Expansion, the interests of such Owners will be deemed adjusted, upon the recording of an Expansion amendment and without more, to equally allocate ownership among all Owners, both pre-existing and new. The interest of any Mortgagee in Common Areas by virtue of this tenancy in common interest, shall attach, by operation of law, to the new percentage interests in the Common Areas appurtenant to the Lot on which it has its lien.

11.2.9 Reserved Easements. Declarant reserves easements over the Common Areas for the benefit of all portions of the Subdivision not yet included in this Declaration, for the purposes of vehicular and pedestrian access; installation, repair, maintenance and replacement of utilities to serve the Expansion areas; marshaling of construction materials and personnel for improvements made to the Expansion area; and the use of Common Improvements and Common Areas for recreational purposes consistent with those uses granted to Owners.

ARTICLE 12. REMEDIES

12.1 General Remedies. If any Owner or Occupant fails to comply with this Declaration, the Bylaws, or the Rules, such Owner or Occupant shall be liable for damages, subject to injunctive relief (including an order requiring the removal at the Owner's expense of Buildings constructed

without ACC approval), subject to any other remedy provided by the Bylaws or at law, or all of the above, as a result of such noncompliance. The Association or, in a proper case, an aggrieved Owner, may bring an action because of such noncompliance.

12.2 Owner or Occupant Violation; Association Right to Cure. In addition to any other remedies provided herein, if any Owner or Occupant fails to comply with this Declaration, the Bylaws, or the Rules, which failure continues for a period of fifteen (15) days following written notice from the Association, the Association shall have the right, but not the obligation, to perform or cause to be performed such maintenance, replacement, restoration or commence litigation, arbitration or other proceeding or other action as the Association deems necessary or appropriate, in its sole discretion. Expenses incurred therefor by the Association shall be assessed against the Owner or Occupant and shall be subject to all rights and remedies reserved under this Declaration with respect to collection, expense, late payment penalties or interest, filing of a lien and/or foreclosure as reserved at Article 4 of this Declaration. Once the Association has taken such an action, it shall not be obligated to take any other or further action with respect to the same, similar or subsequent failure by the same or a different Owner or Occupant.

ARTICLE 13. EASEMENTS

13.1 Right of Entry. A right of entry to each Lot or Common Area is reserved to the Association to service utility installations located on, in or under such Lot or Common Area provided request for entry is made in advance and such entry is limited in scope so as to extend only as is reasonably necessary to service such utility installations. In case of emergency, entry by the Association onto any such Lot or Common Area may be made immediately, whether the Owner or Occupant of such Lot or Common Area is or is not present and without liability of the Association or its agents if such entry is necessary for the safety or welfare of persons or property. Any damage or loss caused as a result of such emergency entry shall be the sole expense of the Owner or Occupant if, in the reasonable judgment of those authorizing the entry, such entry was for emergency purposes.

13.2 Common Area Easements. The Association may grant easements over and through the Common Areas for such purposes as the Board deems reasonable for the benefit of the Owners.

ARTICLE 14. TERMINATION

14.1 Termination. This Declaration shall be in effect for a period of twenty-five (25) years and automatically renewed for successive periods of ten (10) years each, unless terminated at the end of the original or any extended term by: (i) Declarant (if during the period of Declarant control of the Association), or (ii) the written consent of the owners of not less than ninety percent (90%) of the aggregate then existing Lots provided that no vote shall effect an amendment to or termination of any provision hereof conferring on or reserving a special right or easement to Declarant without the express written consent of Declarant, as appropriate. Voluntary termination of this Declaration must be express and shall be effective upon recording a written instrument to such effect in the office of the Register of Deeds. If the Owners decide to terminate the Association, a maintenance and operation plan for the Common Areas and Storm Water Facilities, if any, shall be presented and approved by the Municipality prior to such termination. Nothing provided in this Section, by itself, terminates or shall be interpreted to authorize termination of any drainage easements, pond maintenance requirements, or other restriction herein that affects an

interest in real estate while the record title to the real estate or an interest in the real estate remains in the State of Wisconsin or a political subdivision or municipal corporation of the State of Wisconsin, including the Municipality, and the duration of any such restriction shall be unlimited and perpetual, unless terminated by the benefitted political subdivision by record document.

ARTICLE 15. CONSTRUCTION AND EFFECT

15.1 Number and Gender. Whenever used herein, unless the context shall otherwise provide, the singular shall include the plural, the plural shall include the singular, and the use of any gender shall include all genders.

15.2 Including. Whenever used herein, the term "including" preceding a list of one or more items shall indicate that the list contains examples of a general principle and is not intended as an exhaustive listing.

15.3 Captions. The captions and article and section headings in this Declaration are intended for convenience and reference only and in no way define or limit the scope or intent of the various provisions hereof.

15.4 Severability. If any portion of this Declaration or its application to any person or circumstance is held to be invalid or unenforceable, the remainder of this Declaration, or the application of such provision, or any part thereof, to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be affected thereby. The remainder of this Declaration shall be valid, and enforced, to the fullest extent permitted by law.

15.5 Remedies. All remedies herein are cumulative.

15.6 Waivers. Whenever a waiver, consent or approval is required or permitted herein, it must be express and in writing; no waiver, consent or approval shall be implied. A waiver, consent or approval to any one matter shall not be deemed a waiver, consent or approval to any subsequent matter whether similar or not.

15.7 Assignment of Declarant's Rights. Declarant may from time to time assign any or all of the rights and benefits conferred on or reserved herein for Declarant in its status as such (as opposed to those rights or benefits conferred on or reserved for all Owners or groups thereof), by an instrument in writing specifically identifying the rights and benefits so assigned which is recorded in the Register's Office.

15.8 Other Regulation. Nothing herein shall preclude or restrict Declarant recording other covenants, conditions or restrictions which further regulate portions of the Subdivision which Declarant owns at the time of recordation.

15.9 Conflict. In the event any covenant or provision of this Declaration is in conflict with any ordinance, code or law of the Municipality or other governmental authority having jurisdiction, the governing authority shall control and supersede that provision of the Declaration. All remaining covenants and provisions of this Declaration shall remain in full force and effect

[SIGNATURES APPEAR ON FOLLOWING PAGE]

IN WITNESS WHEREOF, this Declaration has been duly executed as this _____ day of _____, 20___.

DECLARANT:

Welshire Farm, LLC,
a Wisconsin limited liability company

By: Neumann Developments, Inc., sole Member

By: _____
Bryan Lindgren, President

ACKNOWLEDGMENT

STATE OF WISCONSIN)
) ss.
COUNTY OF WAUKESHA)

Personally came before me this ____ day of _____, 20___, the above named Bryan Lindgren, President of Neumann Developments, Inc. sole member of Welshire Farm, LLC, by its authority, and to me known to be the person who executed the foregoing instrument and acknowledged the same.

[SEAL]

_____
Name:_____
Notary Public, State of Wisconsin
My commission:_____

This instrument was drafted by:

Neumann Developments
Ryan Fritsch
N27 W24025 Paul Court, Suite 100
Pewaukee, WI 53072

EXHIBIT A

Legal Description

EXHIBIT B

Final Plat